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NATIONAL FISHERMAN

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signals

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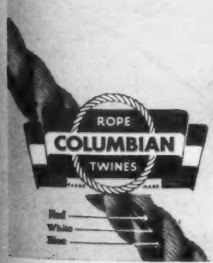

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Here's the strongest rope you can buy. Naturally waterproof. In sizes up to 10" circ. Made of plied yarn filament nylon, stabilized to prevent shrinkage.

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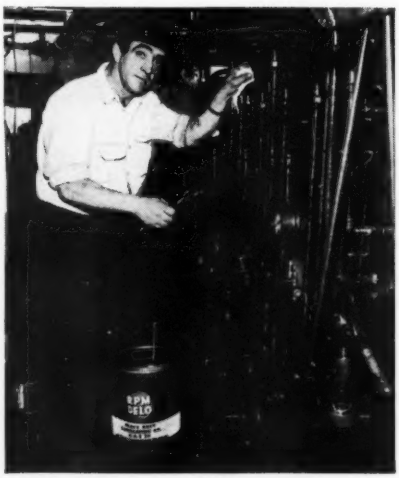
Using RPM DELO Oil, M. V. Giuseppe-Maria's 110-hp Atlas marine diesel engine has run more than 80,000 hours without major overhaul. When engine recently was torn down for routine, periodic inspection, crankshaft showed no measurable wear, rod and main bearings were returned to service. Only piston rings, which showed normal wear, were replaced. "Rings were free and clear of carbon...so were other engine parts...and piston sleeves were unscored," reports Skipper Anthony Cresci. "She looked like new inside." 58-foot vessel hauls up to 50 tons of rock cod, flounder and other flat fish from operations along 160-mile stretch of California coast, averaging 520 hours running time monthly.

Skipper and owner Anthony Cresci (right) points to oil pressure gauge which registers a steady 25 lb. psi at normal and high speeds and 15 lb. psi while idling, indicating excellent condition of Atlas Marine Diesel. Says Mr. Cresci: "We've used nothing but RPM DELO in this engine since it was new, 13 years ago. We feel DELO is the best possible oil to use in this type of service, and the condition of the engine proves we are right." The Cresci family has used Standard products aboard their fishing boats since 1919.



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The Lookout

Role of Tide Marshes

According to Frederick A. Kalber, Jr., of the University of Delaware Marine Laboratories, it is important for the fishing industry to be concerned about tide marshes. In a recent bulletin of the Laboratories, he stated in part:

"Tide marsh areas are decreasing each year, while in their place industrial sites, dredge spoil areas, and fresh water impoundments are increasing. Yet, tide marshes (are) an integral part of the estuarine environment.

"An evaluation of the role of these marshes in estuarine productivity should be determined before they are irrevocably destroyed. Tidal marshes are a distinctive feature of lowlands bordering the sea. Tongues of ocean bordered by the marshes are high in biological productivity, because marshlands seem to help the bay waters manage their nutrient 'finances'.

"Because fresh water runoff carries into the bay a large amount of dissolved nutrient material, the 'management' function of the marshes becomes important in the ultimate conversion of these nutrients into plants and animals.

"Throughout the year, a certain portion of the plant life on the marsh dies and decomposes. This breakdown process culminates in the release of the inorganic nutrients originally removed from the water. These materials are steadily fed out into the bay during each ebb of the tide from the marsh lands.

"One of the times during which this function may be valuable is during periods of low river runoff and consequently, a decreased nutrient flow into the bay. Another may be during very favorable periods of growth for the floating microscopic plants. At such a time, the nutrient values in the water are rapidly depleted due to this growth activity.

"The marshlands are certainly not capable of filling large-scale nutrient needs in the bay water, but their value lies in the fact that they are probably able to minimize existing fluctuations in many areas of the bay.

"The biological and economic results of marshlands may be varied and extensive. For instance, a steadier supply of inorganic nutrient in the water may result in a more constant food supply for fish and shellfish at all stages of their development. This effect may promote the existence of many types of organisms in areas of the bay where they would not ordinarily be found."

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The Fishing Industry Magazine

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FISHERY PROGRESS

► Boat Subsidy Unsettled

Congress adjourned without taking final action on the legislation to subsidize construction of a modern fishing fleet.

Measures passed by the House and Senate differed sharply and proponents said it was impossible to compromise the two versions in the last two days of the session.

The Senate version authorized a three-year program costing $15,000,000 for Federal subsidies to shipyards for new vessels. The House bill called for spending only $3,000,000 over the same period.

The adjournment of the first session does not negate the actions already taken. When Congress reconvenes in January, it can move directly into a conference on the legislation.

► Seven Month's Catch Up

The catch of fish and shellfish in the United States during the first seven months of 1959 totaled over two billion pounds. This represents an increase of 17 percent over landings for the same period in 1958.

Data shows an increase of 437 million pounds in the menhaden catch, an increase of eight million pounds in the New England herring landing and an increase of six million pounds in whiting.

The Atlantic fisheries accounted for 233 million pounds of the menhaden jump and Gulf fisheries were responsible for the other 204 million pounds.

Other fisheries showing increased landings were Alaska herring up ten million pounds; tuna in California up nine million pounds; and jack mackerel in California up nine million pounds.

► Warns of Cable Damage

Transatlantic cables on the floor of the sea off the coast of Nova Scotia and Newfoundland persent a serious problem to boats trawling for groundfish, according to Joseph F. Puncochar, director of the North Atlantic Region, Bureau of Commercial Fisheries.

"The concentration of underwater telephone cables which have to cross the area where groundfish are most abundant require considerable care on the part of trawler skippers to prevent serious losses."

These losses he pointed out were of tackle, valuable cargo and time to fishermen, and critical and expensive interruption of telephone service—personal, business, and government. Some of the cables carry as much as 2,500 volts of electricity.

Accurate charts are available from the Bell Telephone System indicating the locality of cables and enable trawler captains to avoid dropping anchors and heavy gear or dragging nets near cable locations.

► Seeks Shellfish Import Study

Congressman Russell V. Mack has advised that he has written Chairman Bonner of the House Merchant Marine and Fisheries Committee urging that the Committee investigate the impact of increasing crabmeat and oyster imports from Japan upon the prosperity of the American shellfish industry.

He cited figures to indicate that imports of Japanese canned crabmeat had increased by 56 percent during the first six months of 1959. During the same period he said, canned oyster imports from Japan had increased 40 percent.

► New Fleet Additions

During the first six months of 1959, a total of 262 vessels of five net tons or over received first documents as fishing craft. This is 102 less than reported during the same period last year.

Most of the decline occurred in the Gulf area where 73 fewer vessels were documented than the year before. The Gulf however, retained the lead with a total of 76 new vessels.

Eighty vessels received first documents during June 1959, for an increase of eleven over the same month in the previous year. The Gulf lead with 25 new boats, while the Pacific Coast was second with 20.

The South Atlantic and Alaskan areas accounted for 13 vessels each. The remaining 16 boats were listed for the Chesapeake, Middle Atlantic, Great Lakes, and New England areas.

► Wants New Salmon Agreement

Congressman Thomas Pelly of Washington state has declared that he will press for enactment of his Salmon Embargo Bill during the Second Session of Congress, unless Japan and the United States can formulize a new adjusted abstention line.

Pelly stated, in a letter to Interior Secretary Seaton, that he feared this year's re-opening of Bristol Bay, the high cycle salmon run expected next year, and the high level tuna talks might obscure the danger to the salmon industry.

► Law Of The Sea

The four conventions adopted by the 1958 UN Conference on the Law of the Sea were cleared by the interested governmental departments and sent to the White House recently.

The four conventions deal with territorial sea, regime of the high seas, fishing and conservation of the living resources of the sea, and the continental shelf.

► June Imports Drop

Imports of edible fresh, frozen, and processed fish and shellfish into the United States during June 1959 decreased three percent in quantity compared with May 1959.

The decrease was due primarily to lower imports of frozen and canned tuna which more than offset higher imports of frozen fillets, spiny lobsters and frozen and canned salmon.

Compared with the month of June 1958, the imports took a drop of 3.9 percent. Substantially lower imports of groundfish fillets, frozen shrimp, frozen tuna, and canned salmon were responsible for the decline.

► Pesticide Research Program

Endorsement of legislation to increase the scope and value of the research now being conducted to determine the effect of insecticides and pesticides upon fish and wildlife was announced by the Department of the Interior recently.

Investigations which have been made under existing legislation clearly indicate a problem of much greater magnitude than originally contemplated. They also show that the existing authorization is inadequate.

► Anderson to Halibut Commission

The White House has announced the appointment of Andrew W. Anderson as the United States member of the International Pacific Halibut Commission. Anderson, assistant director of the Bureau of Commercial Fisheries, succeeds Seton H. Thompson, who is now the Gulf and South Atlantic Regional director with headquarters in St. Petersburg Beach, Florida.

► New Gulf Caribbean Secretary

The executive committee of the Gulf and Caribbean Fisheries Institute has announced the appointment of James B. Higman as executive secretary.

Higman, with the University of Miami Marine Laboratory, fills the position vacated by Dr. C. P. Idyll, who was elected chairman of the Institute at its eleventh annual session at Miami Beach Florida, last November.

For the long haul . . . B. F. Goodrich seine floats

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Add, too, that B. F. Goodrich plastic seine floats need no maintenance, do resist marine growth, oil, gasoline and salt water.

So ask your supplier now before endless maintenance and replacements start. B. F. Goodrich floats come in 17 sizes ranging from 3" x 1½" to 6" x 14".

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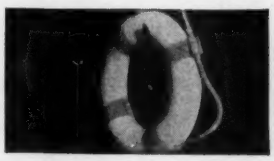

Now available! B. F. Goodrich ring life buoys for fishing boats. U.S. Coast Guard approved and accepted by commercial lines, these rings have all the advantages of the floats.

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WAUKESHA *marine diesel*

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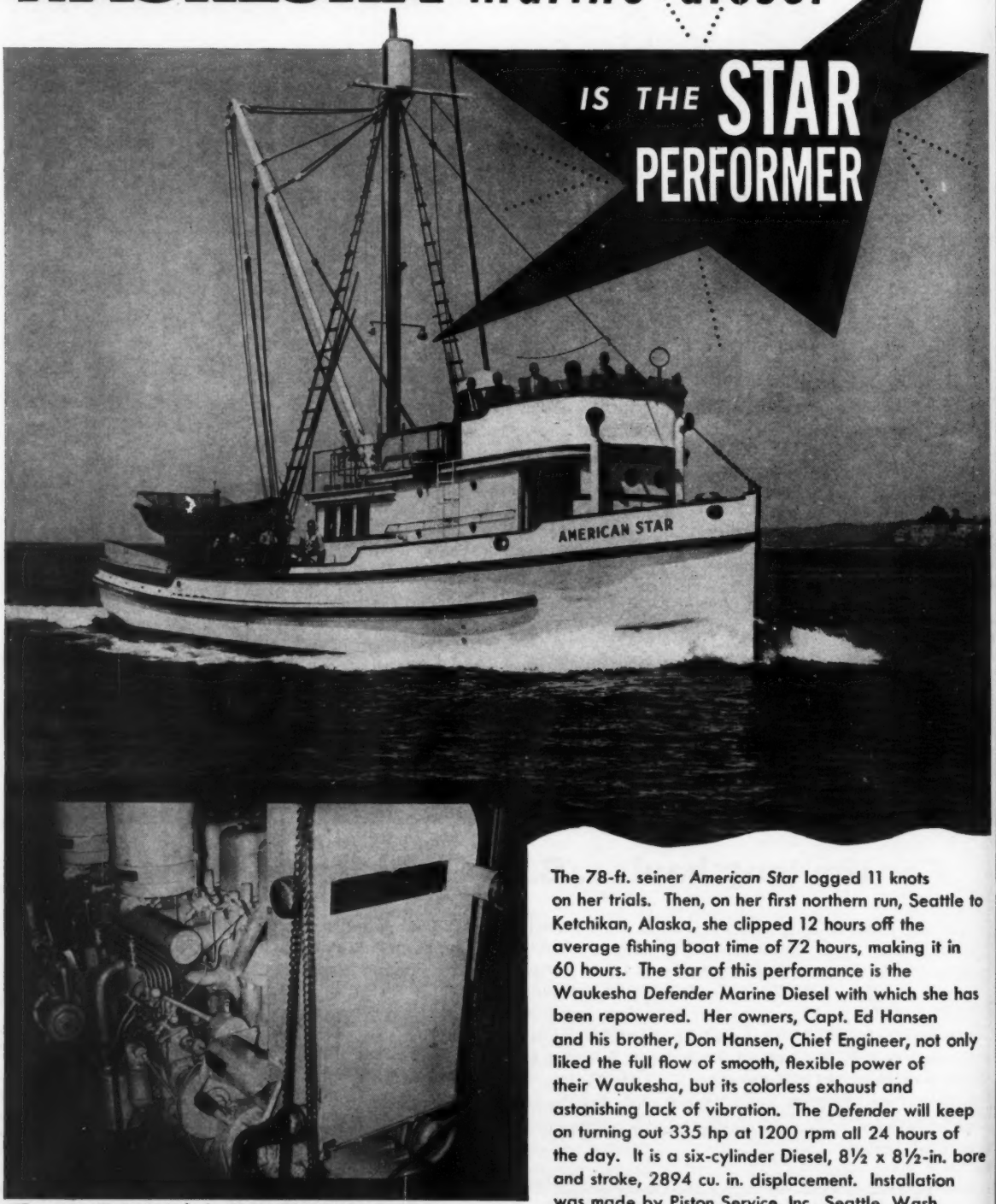

447 Waukesha *Defender* (Model LRDBCM) Marine Diesel, with Twin Disc 3:1 hydraulic reduction-reverse gear.

The 78-ft. seiner *American Star* logged 11 knots on her trials. Then, on her first northern run, Seattle to Ketchikan, Alaska, she clipped 12 hours off the average fishing boat time of 72 hours, making it in 60 hours. The star of this performance is the Waukesha *Defender* Marine Diesel with which she has been repowered. Her owners, Capt. Ed Hansen and his brother, Don Hansen, Chief Engineer, not only liked the full flow of smooth, flexible power of their Waukesha, but its colorless exhaust and astonishing lack of vibration. The *Defender* will keep on turning out 335 hp at 1200 rpm all 24 hours of the day. It is a six-cylinder Diesel, 8½ x 8½-in. bore and stroke, 2894 cu. in. displacement. Installation was made by Piston Service, Inc., Seattle, Wash. Send for Bulletin 1721.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS. / **New York • Tulsa • Los Angeles**
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Improved Fish Quality Controls Stressed

Atlantic States Marine Fisheries Commission 18th Annual Meeting Finds antibiotic controls, fishery products standards desirable

The need for more and better fishery product standards, the concern over noncontrol of antibiotics as used for preservatives in the fishing industry, and the standing of state jurisdiction if territorial waters are extended were matters for discussion at the 18th Annual Meeting of the Atlantic States Marine Fisheries Commission, September 22 through 24.

The 80 commissioners and advisors representing the 15 member states, meeting at the Governor Clinton Hotel in New York City, elected as chairman Dr. G. Robert Lunz, director Bears Bluff Laboratories, Wadmalaw Island, S. C. They also elected Capt. David H. Hart of Cape May, N. J. as vice-chairman. Section officers were renamed for another term. Wayne D. Heydecker continues as secretary-treasurer.

A Need for Fish Product Standards

Several of the most pressing problems facing the fishing industry on the Atlantic seaboard, as expressed by members of the industry and state and federal personnel working in fishery technology, were considered in a report of the Commission's Technological Committee.

First considered was the widely expressed need for market standards to cover handling, storing, and transporting of fresh fish and shellfish to insure and/or improve quality at the wholesale level. Of concern to even the smallest producer is having products destroyed, down graded, condemned or handled as sellovers due to poor condition at the wholesale market. Sale of low grade fish produces an unfavorable reaction by the consumer, to the detriment of the entire industry.

A high quality product merits recognition, it was agreed, and this can be achieved through the use of federal shields. These shields are designed to inspire trust and confidence on the part of the public. Their appearance assures the buyer that the product was prepared under continuous inspection according to standardized operations from wholesome materials and will evidence good flavor and workmanship.

Although definite advances have been made in improving quality of frozen fish fillets, fish blocks, and such fish products as frozen fish sticks, frozen breaded shrimp, frozen raw breaded fish, much work remains in that area. Standards of quality have been, or are being, established for several fish products.

Related to the formation of standards are such studies as those being carried out at the Fish and Wildlife Service Laboratories for detection of bones in fillets. Chlorinated seawater is being used on some trawlers to improve sanitation. Investigations are being conducted to determine reasons for changes in fish muscle protein resulting from certain process practices.

These searches for methods to reduce spoilage on fishing boats and in processing must be continued in order that unwarranted waste may be held to a minimum.

Developing Standards

There are four phases in the development of a fishery product standard, as described to the commission by J. A. Holston, Chief, Branch of Technology, Division of Industrial Research and Services. The first involves industry recognition that standards are needed for a particular product, and forwarding to the appropriate Government agency a request for such work to be instituted.

Upon receipt of the request, the Bureau of Commercial Fisheries must then initiate the necessary development research as soon as the availability of man-power and funds permit. The period of research is the second phase.

The third stage involves industry review of the requirements in the proposed standards. This is to ensure that they are practical and reflect quality levels that are reasonable attainable by the industry.

The fourth phase involves publication in the Federal Register. A notice of Proposed Rule Making is published there and after a period of two to four weeks, for comments by the parties concerned, a second notice is published.

The second notice is the Notice of Final Rule Making. At that time the proposed standards become official documentation for the description of the product and the grade qualities that may be associated with it.

In addition, as the standards are evolved, informational manuals, inspection aids, product models, photographs and test machines, as well as instruction manuals are also developed. These are necessary to assist the inspector in the application of the standards within the processing plant.

Inspection and certification involves the study of the product and the verification by a trained Government inspector that the product meets the established requirements in a set of pertinent standards or specifications.

There are now 29 inspectors operating in 26 processing plants and lot inspection offices. Carefully selected, they are transferees from Agriculture forming the nucleus of the force. Twenty were selected from a group of 200 applicants, the majority of which are college graduates trained in food technology. The others have had long experience in fisheries.

All have undergone an intensive training program in the Bureau's policies and in the application of the standards. Now that the inspection service is a fact, it is utilizing the services of these trained inspectors, in the plants of cooperating members of the industry, to train further recruits.

The first stage of inspection for a fishery product involves the testing of raw materials. The best place, in the breaded shrimp industry for example, is the point of entry into the plant or on the shrimp grading belt. At this point the inspector accepts or rejects the lot.

The second major step of the inspection service provides for periodic sanitary inspection of the plant at several times throughout the day. The third and most important stage of the inspection service involves supervision of the processing line. For this, each inspector has a checklist of critical points in processing the fishery products within his assigned plant.

Non-standardized products may also merit special confidence. Every label bearing the Federal shield and the inscription "Packed under continuous inspection of the U. S. Department of the Interior" indicates the produce was prepared according to approved specification from wholesome raw materials, under continuous inspection by a trained Government inspector.

Although only 25 fish processors have subscribed to continuous inspection, appropriate marketing methods should increase a consumer demand for products bearing the seal of approval.

Control of Antibiotics

Members of the industry also have expressed an apprehension concerning uncontrolled use of antibiotics for preservation of fishery products, according to Harold F. Udel, chairman of the Commission's Technological Section. This concern has developed as a result of past experiences with additives to enhance holding time. The tendency to try any or all methods for increasing hold-

(Continued on page 26)

Typical tuna clippers, trollers, and seiners in California port.

CALIFORNIA CATCHES RISE IN

Expanding West Coast Tuna Fishery

Landings of tuna at California ports during March 1959 amounted to 21,639,872 pounds compared with 18,879,987 pounds in March 1958, representing a gain of 2,759,885 pounds, During the first quarter of 1959, tuna landings in California rose 2,743,344 pounds over the same period of the previous year to a total of 56,940,950 pounds. California's twelve-month figures for 1958 show a total of 305,095,081 pounds of tuna landed to raise 13,642,903 pounds over the 1957 total.

The tunas are one of the United States' leading fishery resources. In 1958 as in the two preceding years tunas were taken domestically in greater volume than any other foodfish, and they ranked third in the value of the catch. Five species are taken generally by American fishermen. They are albacore, bluefin, little, skipjack, and yellowfin. In addition bonito and yellowtail are packed tuna-style and known as tuna-like fishes, although they can not be labeled as tuna.

The taking of impressive quantities of tuna on the Pacific coast, where most of the U. S. catch is made, is of comparatively recent origin. Although tuna were well known to southern California anglers prior to the twentieth century, the fish billed as tunny by the British, were not considered edible and catches were generally discarded.

Failure of the Pacific sardine to appear in San Pedro in 1903 was primarily responsible for the development of the tuna fishery.

Albert P. Halfhill, operator of a successful, San Pedro sardine canning factory found it necessary to shut down operations. However, accidentally dropping an albacore into a steam caldron he noticed that the dark meat of the fish turned white.

Experimenting further, in an effort to keep his cannery operating, Halfhill found albacore to be excellent in salads. He then prepared 700 cases of them which were distributed to wholesalers as "Tuna". Repeat orders were received and by 1907 the tuna canning industry was moving out of the experimental stage. By 1914 eleven canneries were operating and the industry was becoming well established.

In 1958 a total of 36 canneries in seven states, American Samoa, Hawaii, and Puerto Rico produced a pack of 277 million pounds of canned tuna and 46 million pounds of bonito and yellowtail.

When the tuna fishery first started in Southern California, albacore was the only species taken for canning. However, it was found that runs of albacore were erratic. Catches of skipjack, yellowfin, and bluefin were reported in 1916.

Growth of the Industry

The fishery grew rapidly and the catch totaled nearly 100 million pounds in 1930. In 1940, it passed 200 million pounds and a peak of 390 million was reached in 1950. As the demand for tuna increased, local supplies were found to be inadequate and it became necessary to make voyages south of the Mexican boundary off Central and South America where large concentrations of the fish were found throughout the year.

In 1927 for the first time production south of the border exceeded the catch off California. Catches off South and Central America continued to grow rapidly and in most years since 1947, over ninety percent of the Pacific Coast catch has been taken from those waters.

Albacore, the only species permitted to be marketed in the United States as white meat, continued to be the principal species taken through 1925. However, after that year, the fish nearly disappeared and the catch declined to less than 2,500 pounds in 1933. In 1935 they reappeared in volume off Southern California and in 1947 were found off the coasts of Washington and Oregon. The catch then increased spectacularly, reaching a peak of 72 million pounds in the 50's.

Bluefin has been taken by Pacific fishermen in smaller quantities than the other species. In 1958 a record catch of nearly 31 million pounds exceeded the former peak production of 1935 by almost six million pounds.

The skipjack, smallest of the commercial tunas, is probably the most abundant. Catches increased steadily after 1918. In 1950 production exceeded 100 million pounds for the first time, and has averaged over 114 million pounds annually since then. Skipjack and yellowfin are taken principally in the same area by the same boats and type of gear. Generally therefore, there is a single fishery for the two species.

Yellowfin is the principal tuna taken by the Pacific fishermen. Catches exceeded 100 million pounds in 1939 and since 1946 have ranged from 119 million pounds to a peak of 199 million.

When, in 1958, San Pedro, California, again led the nation in poundage and value of fish landed with 380 million pounds valued at 27.9 million dollars, tuna comprised more than half the figure with a catch of 183,948,403 pounds. The total Pacific coast take was 326 million pounds valued at 44.5 million dollars.

Methods of Catching

About 75 percent of the annual catch is taken by bait boats or tuna clippers, which are the most expensive fishing boats afloat. However, there has been a trend toward converting bait boats to seiners which seems to have met with success, but, bait boats are still the backbone of the tuna fleet.

As fishing craft they are very modern although they use the simplest fishing gear. Hook and line fishing is the

(Continued on page 27)

Gillnetting Operations on the Great Lakes

THE gillnet method of fishing is used on all the Great Lakes, but is most popular and numerous on Lakes Michigan, Huron, and Superior. The nets are so designed that fish are entangled in the netting. The mesh is such as to allow the fish's head to pass through but not its body, and the fish is caught by the gills.

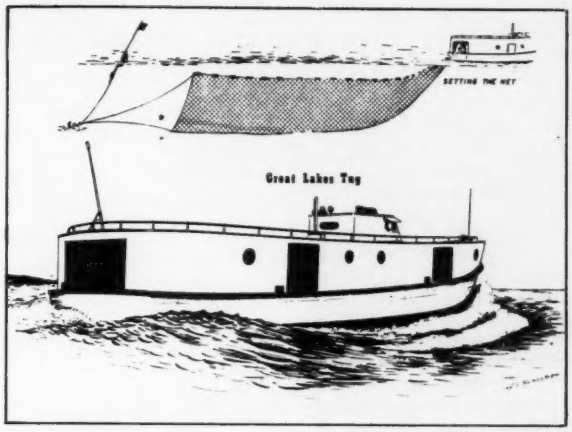
The gillnets are set on the bottom, and vary in length from 1,000 to 30,000 feet. The lengths are made up into boxes, each box containing from 1,000 to 2,000 feet with floats and leads. The nets vary in width from 5 to 6 feet. Along the upper portion of the net are aluminum or plastic floats. The floats are approximately four inches in length by two inches in diameter. They are spaced from seven to nine feet apart. Opposite each cork is six-ounce lead to sink the net. The leads are of cylindrical shape about four inches long with a hollow center. They are tied, although permitted to revolve and move slightly back and forth, so that they is no binding when pulled around the lifting drum.

The nets are usually nylon, and the mesh is about 2.5 inches, although this differs greatly from state to state. The seaming twine is cotton. Float and lead lines are of linen or cotton, and occasionally nylon thread of three or more strands, dipped in gasoline and oils preservative. Newly-treated nets are never carried inside the superstructure because of their volatility, which is dissipated after the first setting.

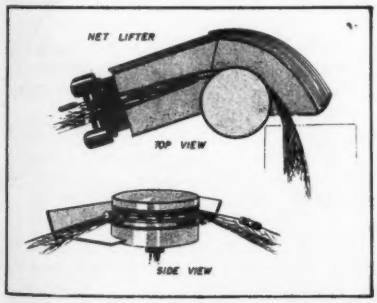
The depth at which the nets are set varies with the season, the species, and the locality. Modern lifting gear, has reduced the labor of deep-water fishing. Two men with a mechanical lifter can haul nets from over 30 fathoms, whereas it once required three to five men doing the work by hand.

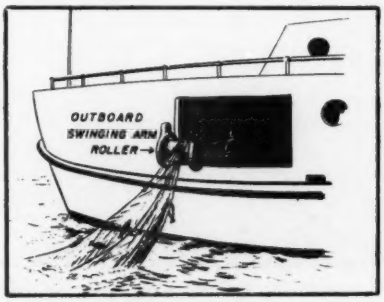
The nets are stretched on a drying reel, and then stowed in boxes with the leads arranged and stacked in tiers along the right-hand side of the box. Floats are stowed in tiers throughout the remainder of the box. Care is taken that each float corresponds to its lead so that all runs free when setting. The belly of the net is allowed to overhang the edge of the box. When the reel is emptied, the belly is folded over the float and leads.

The ends of the float and lead lines hang from the box. When all the boxes are packed, they are loaded into the after or raised platform of the boat. The number of boxes



set in any one day depends on locality and the individual fisherman. Ten to 30 boxes is the usual number. Ideally, the width of the hull, just forward of the setting platform, will be that of a given number of boxes to present any movement due to rolling. Net boxes are seldom stowed more than two high because of the weight and the inconvenience of hauling and stowing them.





Setting and Hauling

When the fishing grounds are reached, a buoy-anchor and buoy-line are made ready. These are often carried on the housetop, but sometimes inside. The buoy and its anchor are then dropped with a suitable length of bridle, varying according to the water depth. When the buoy is in place and anchored, the vessel moves ahead at a speed, depending on the weather, and the skill of the men setting the nets. Each man setting, picks up a lead and a float from the box and throws them clear of the stern. When the box is almost empty, a second box is moved into place and the ends made fast so it is ready to be set when the first is empty.

When the desired length of net is in the water, a second bridle is made fast and attached to a second buoy and anchor.

The reverse process is used when hauling, but always in the forward portion of the vessel. The location of the forward opening varies from boat to boat. A trough and a roller extend over the side of the hull for approximately 30 inches. Large guides on the ends of the roller prevent the net from slipping off as it passes to a hauling drum via the trough. Drums, range from ten to 30 inches in diameter, the last being the most common size. The hauler is designed to catch the leads. The floats, being opposite the leads, are pulled evenly with them.

The net sags between the float and the lead lines. As the nets pass the drum, the floats, lead lines, and fish are dispersed in the net's belly. It the net is heavily loaded with fish, it is common, to allow the fish to remain in the nets and to stow them in boxes. With light catches the fish are picked from the nets as they come aboard. During hauling, the speed of the vessel is very slow. The filled boxes are stowed as directed by the skipper, while the wet nets are placed in another part of the vessel. In winter, the boat is kept as closed as possible as it is essential to prevent freezing.

After a haul, the vessel proceeds to the next set of nets. During this run, some of the crew pick the nets just hauled, or gut the fish. Hauling is normally done after all

(Continued on page 32)

* Second of two parts excerpted from material by Thomas E. Colvin, Naval Architect, Waukegan, Ill., presented at the Second World Fishing Boat Congress, Rome, Italy.

Glass Reinforced Plastic Hulls For Fishing

Low maintenance cost, non-corrosion, non-adsorption of water, resistance to impact are cited as advantages of Plastics*

Glass reinforced plastic can be used for making the hulls and decks of all vessels—fishing boats in particular—up to 130 feet in length. Glass reinforced plastic in this context means a laminate of several layers of glass fiber mat, impregnated and bonded with cold setting polyester resin.

A polyester mat hull requires no maintenance. It is a homogeneous structure: therefore it cannot leak, it cannot corrode, and it cannot be attacked by marine borers. Barnacles and algae will attach themselves in the same manner as on a timber or metal hull, but they are far more easily cleaned off.

One of the greatest advantages is easy repair. If a polyester/mat hull is damaged in a collision it can be repaired in about one-tenth of the time which would be taken to repair a wooden hull. If a frame is damaged, there is no need to replace the frame as in a wooden hull, because the damaged portion can be cut away and replaced.

Cost is the only limit to the size of polyester/mat hulls. Up to 130 ft. in length the initial cost is less than timber, aluminum or steel hull. Thereafter the initial cost of a steel hull is likely to be less because the raw materials of polyester/mat are a great deal more expensive than steel.

Where the shape of the hull does not involve much curvature, and in consequence little labor has to be spent in bending, steel has a clear advantage. However, with hulls of less than 130 ft. in length there is a great deal of curvature and much labor must be used to bend steel to shape. Moreover, the steel used for small vessels has to be so thin that it can easily rust through—if the steel is thick enough to withstand rust, the hull will be heavy and expensive.

Polyester/mat hulls cost the same or less than wooden hulls in spite of the fact that molds are expensive, and in spite of the fact that the hulls are larger power driven vessels must be properly stressed and must therefore be made in temperature controlled buildings, because it requires far less labor than to build a timber or metal hull.

The cost of a polyester/mat hull less than 31 ft. in length will be less than the cost of a timber hull provided that at least three hulls are required from the same mold. Between 30 and 50 ft., a polyester/mat hull can compete with a timber hull provided two hulls are required from the same mould.

For the manufacture of plastic boats polyester resin is used to set at a predetermined time by the addition of two other chemicals. After the resin has set it will harden over a period of about four weeks. The resin usually sets in 30 minutes.

The glass mat is made of short lengths of glass threads disposed at random loosely held together like a course felt. The thread is composed of fibres about one-tenth the thickness of a human hair and are extremely strong and flexible.

It is possible to make laminates with glass cloth which have much higher tensile strength than laminates made with mat, but glass cloth is not suitable for boats because the resulting laminate is expensive, the high tensile strength is unnecessary, and glass cloth will easily delaminate if the surface is damaged.

Laying Up The Hull

Hulls are laid up inside a female mold. The mold itself can be made of polyester mat by first making an exact model of the hull and then laying up the polyester mat mold over model. This is convenient for complicated shapes such as deck-houses or where a great number of hulls are likely to be taken from the same mold. It is, however, cheaper and quicker to build molds of timber. The frames of the mold are cut from timber or steel to the outside shape of the hull. The frames are mounted in a cradle built of steel or timber. Fore and aft 2 x 2 in. wooden "ribbands" are secured to the inner face of the frames at about 5 in. intervals.

The working surface of the mold is made of plywood secured to the ribbands. The inner surface of the plywood is then carefully sanded and painted.

The surface of the mold is treated with an agent to ensure that the laminate will not stick. A skincoat is applied by painting or spraying the surface of the mold with a film of polyester resin which will eventually form the outside surface of the laminate.

The next stage is to apply a layer of glass scrim and resin. Scrim is a loosely woven cloth similar to that used to cover bacon. When the scrim coat has hardened, successive layers of glass mat, impregnated with resin are applied until the required thickness has been achieved.

Strength of the Plastic

The tensile strength of polyester resin alone is about 8,000 to 9,000 lbs./sq. inch. After it has been reinforced by glass mat, the minimum tensile strength of the resulting laminate is 15,000 lbs./sq. inch. The mat is composed of glass threads disposed in all directions, therefore the laminate will have this tensile strength in all directions.

Most boats less than 130 feet long are built of timber because it is cheaper than steel of aluminum. The tensile strength of timber is 4,000 to 10,000 lbs./sq. inch along the grain and negligible across the grain.

The tensile strength of timber is diminished by the fastenings and the fact that the grain often runs out. The polyester mat hull has no fastenings and the tensile strength is uniform.

Polyester mat is twice as heavy as timber, but in practice, it is so much stronger that even if the plastic is only half as thick as the timber, or of the same weight, it will be stronger than the timber.

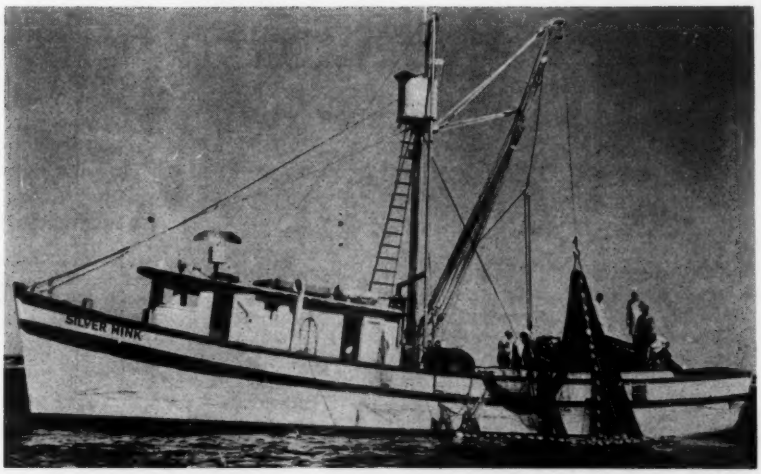
The mat is very strong but it is also flexible. The secret of making it stronger than the timber hull but equally rigid lies in stiffening the skin of the hull with hollow polyester transverse frames similar to the frames in a timber hull.

This consists of making a thin aluminum former of top-hat section over which a layer of polyester/mat can be laid while in a wet condition. After the first layer has solidified a layer of uni-directional glass fibres, known as "rovings" are laid along the top of the frame so as to increase the tensile strength of the top. The frame is then covered with a further layer of polyester/mat. By this system it is easy to make transverse frames for strengthening the main structure or horizontal frames for strengthening the bow or other special regions.

The skeg of a polyester mat hull is made in much the same manner of a skeg of a steel hull. The skin of the hull is carried down to form a hollow skeg which is then reinforced by fitting polyester diaphragms, or floors, in the way of the frames. The diaphragms are prefabricated—the top is turned over to form a right angle

(*Continued on page 31*)

* Condensed from material presented by Patrick D. De Laszlo, Halmatic Ltd., Portsmouth, England, at the 2nd World Fishing Boat Congress held in Rome, Italy, April 1959.



Strapping the purse seine aboard the Provincetown, Mass., tuna boat, "Silver Mink". The vessel was one of the first to convert from standard shrimp trawler design to tuna seining.

New England Tuna Boat Tops Million Mark

More than a million pounds of tuna, or over 500 tons, were landed in less than one month by the Provincetown, Mass., tuna boat *Silver Mink*, which converted to purse seiner for the third year in August.

What had been scheduled as a trial run for the converted tuna seiner during the first week in August, turned out to be one of its best trips. Captain Manuel Phillips, planning to test new gear, caught sight of a school of tuna and set the seine. The *Silver Mink* returned with 100,000 pounds of tuna.

During the later part of the month, 260,000 pounds of tuna were landed in one day by three vessels at Provincetown. Most of the fish were landed by the *Silver Mink*, which came in with holds filled and tuna on the decks. With one boat unable to handle the tuna trapped by the *Silver Mink*, three other craft were loaded. The *Shirley and Roland*, Captain Louis Salvador, and the *Papa Joe*, Captain Joseph Corea, each brought in approximately 50,000 pounds.

The Provincetown captain believes a cannery would be profitable in that area. He said there is enough fish to keep a cannery going year-round. The fish must be frozen, however, for the periods after the tuna season has passed.

New England Bluefin Tuna Purse Seining

Previously, the most successful commercial purse seining of bluefin tuna, in the New England area was done during the short 1958 season. A total of 179.5 tons of bluefin tuna was landed by the *Silver Mink* in a 3 month period last summer. This had been the largest recorded bluefin tuna catch for any vessel in the New England area, during a single season.

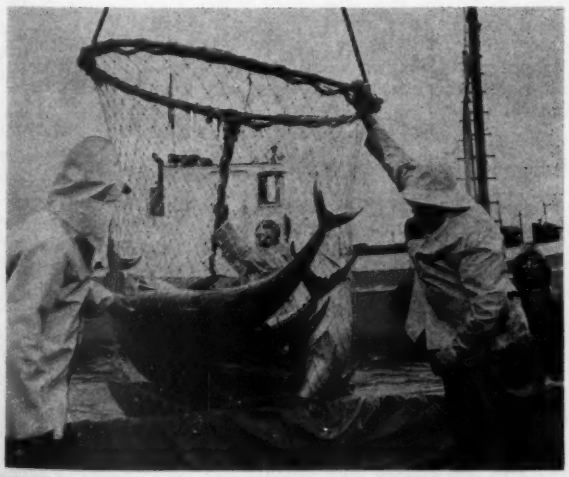
Bluefin tuna are known to appear in commercial concentrations off the New England Coast from July through September. Recent studies by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel, *Delaware*, revealed that bluefin tuna are abundant in the oceanic areas south of New England in the spring season.

Although no extensive, organized effort has been made for many years to exploit this New England coastal resource, it has been subject to local fishing by small boats and traps. Previous fishing by purse seine, on a basis approaching commercial production, was from Gloucester, Mass., during the summers of 1938, 1939, and 1940.

The *Western Explorer*, a Pacific Coast-type purse seiner, was equipped with Pacific-type seine equipment. The *Santa Maria*, standard mackerel seiner-dragger, was equipped with an alternate seine used for tuna. In addition, other vessels have fished tuna during the past 20 years, but only on a limited production scale. In 1951, the *Western Explorer* and in 1953 the *Western Pride* went tuna purse-seining in the New England area, either sponsored by or in cooperation with the U.S. Fish and Wildlife Service.

The *Silver Mink*, of standard shrimp trawler design, is 61.8 feet in length with a beam of 18.7 feet and a draft of 7.9 feet. Built in St. Augustine, Fla., in 1954, the vessel

(Continued on page 30)



Brailing bluefins aboard during experimental run of the "Silver Mink."

Unloading tuna from the "Silver Mink", New England tuna seiner.

NORTH ATLANTIC

Maine Lobster Cooperative Set For Hancock County

Hancock County, Maine, will be the scene of the first co-operative venture of the Maine Lobstermen's Association, president Leslie Dyer said recently. According to Dyer, negotiations for setting it up are well along and are expected to be completed shortly. Eventually it is hoped that several cooperatives will be set up along the Maine coast.

Dyer felt that a growing interest in the organization was reflected by the large numbers of lobstermen attending the six regional meetings which were conducted along the coast recently.

He told a Jonesport meeting that the Association had been active in preventing dragging operations for lobsters in certain areas. He said also, that the Association was becoming more effective by reason of its growing contacts in Augusta, Maine, and Washington, D. C.

The Association was unable to organize a co-operative before September 12, because Maine law did not give such a venture the authority to do anything but a retail business. Under an act sponsored by Representative John Knight of Rockland, fishery co-operatives may now have all the privileges afforded agricultural co-operatives.

Forty foot replica of sardine fisherman erected by Maine Sardine Council greets travelers near Kittery, Me.

Giant Fisherman Plys Wares to Motorists

Motorists entering Maine at Kittery are now welcomed by a giant 40-foot replica of a sardine fisherman erected by the Maine Sardine Council. Garbed in boots and oilskin, the seafarer stands on an elevation near the highway holding a can of Maine Sardines. The display can be seen more than half a mile away and is lighted at night.

Vinalhaven Fish Plant Sought By West Coast Freezing Firm

Negotiations are in progress for the sale of the former Vinalhaven Fisheries plant at Vinalhaven, Maine, to a West Coast firm which would freeze herring for bait. The plant would operate on a seasonal basis, controlled by the arrival of herring in the spring and the closing of the season in December.

Employment would run as high as 30 on a season's schedule, with an annual pack as high as 500,000 pounds of herring measuring four and one half to six inches in length. The prospective buyers indicated a desire to get the plant in operation during October to take advantage of the remainder of the herring season.

A controlling factor in the location of the firm in Vinalhaven is the new ferry which will be in service this fall and which will accommodate trailer trucks.

Passamaquoddy Board Discusses Dams

The final meeting of the International Passamaquoddy Fisheries Board was held at the United States Bureau of Commercial Fisheries biological laboratory at Boothbay Harbor, Maine, recently. The board and its advisors, from the United States and Canada, have for three years been investigating the effect on fisheries of proposed tidal power dams in Passamaquoddy Bay. Their findings will be made public with the submission of a final report, sometime in October.

Massachusetts Adopts Frozen Food Law

The State of Massachusetts has passed a law which would give power to the Director of Food and Drug Administration of the state to set up and enforce a code, safeguarding the handling of frozen foods, including fish products. Shortly before, the Association of Food and Drug officials of the United States held its annual meeting in Boston. At that time, a model code was drafted and approved.

The director of the State Food and Drug Administration has announced industry committees are being set up to assist in the implementation of the law. A series of public hearings will be held in order to obtain the widest cross-section of opinion on the operation and enforcement of the law and regulations.

Consider Fish Advisory Board

Charles H. W. Foster, commissioner of Natural Resources is seeking the suggestions of sports and commercial fishermen of Massachusetts on how a fisheries advisory committee should be composed and what it should consider.

First thought about such a committee came as a result of clashes between State Natural Resources Department law enforcing division and Gloucester draggermen regarding the three-mile limit. Fishermen felt that the Department was apprehending fishermen who were dragging outside the three-mile limit.

The fishermen were told by the Department that the law read there could be no dragging inside a coastal line, which in places might vary upwards to four to five miles from shore. Another argument arose from seiners in alleged conflict with sports fishermen in the Plum Island area.

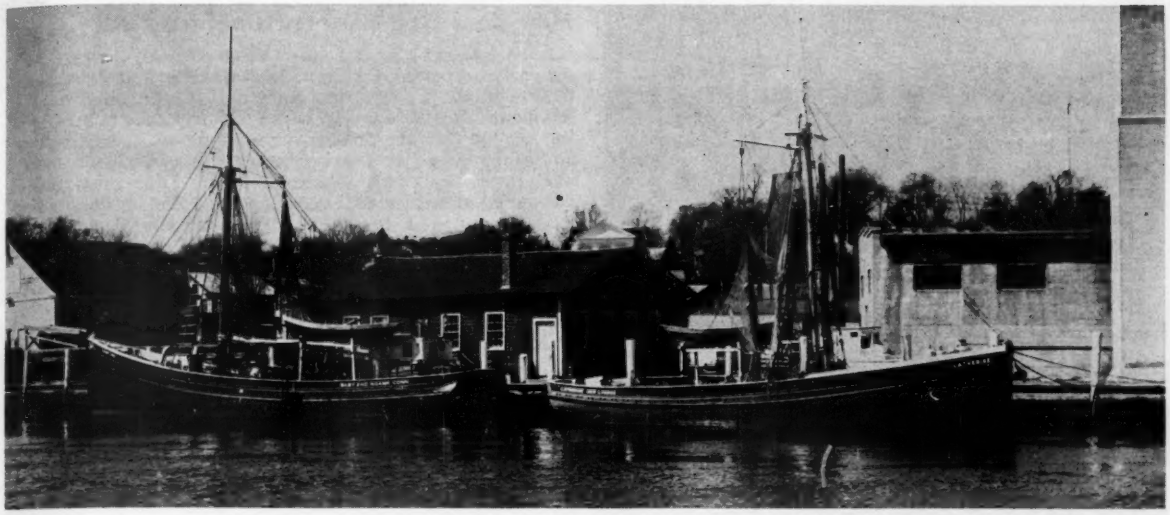
Foster has held two meetings with sport and commercial interests in an effort to pave the way toward such a committee.

Bright Clam Future For Barnstable

A good supply of seed clams in Barnstable Harbor, Mass., this summer promises excellent clamming in a few years, said Reino Lampi, shellfish constable. The heavy anchor frost last winter which damaged oyster and quahog beds did not affect the clams which are in deeper water, he said. At present the scallop crop does not look its best according to Lampi, but the size of the crop can not be known until later in the fall.

Sum Granted For Orleans Quahog Plant

State director of marine fisheries, Frederick C. Wilbour, Jr., has authorized 500 dollars for transplanting seed quahogs in the shallow waters of Meeting House Pond



Mystic, Conn., draggers at Mystic Marine & Commercial Fish Co. dock. The 63 ft. "Baby 2nd", left, owned by Capt. Aldo Bacchiocchi, and the 50 ft. "Catherine", owned by Capt. Bert Ford. Both boats have 187 hp. Lathrop Diesels with Capitol reduction gears.

and River, and an additional 500 to 600 dollars of Orleans, Mass., town funds are available for the job.

Seed quahogs are being dredged from Pleasant Bay with a clam dredge. Shellfish constable, Arthur W. Nickerson, is handling the seeding operation. It is reported that 13 bushel boxes of seed were taken up in the first operation, and each successive operation is increasing the take.

Selectmen have estimated that the cost of dredged seedlings will be about three dollars a bushel compared to ten dollars a bushel if purchased from the State. Test plantings to determine how fast the seed will grow are to be made on the former MacKenzie oyster grant at Meeting House Pond.

Gloucester September Landings Rise

Gloucester, Mass. landings for September 1959, totaled 19,733,600 pounds, topping September of the previous year total of 19,238,100 pounds catch by 495,500 pounds. Five days showed over a million pounds: the 8th 1,687,000 pounds for 31 trips, the 14th with 1,711,500 pounds for 19 trips, the 21st with 1,966,500 pounds for 32 trips, the 24th with 1,271,000 pounds for 19 trips and the 28th with 2,262,500 pounds for 29 trips.

Tuna Landed In Gloucester

The Gloucester fishing vessel, *Marianna II*, landed 11,100 pounds of tuna on September 29. This was a total of 139 fish. The Marianna is another of the increasing number of boats fishing for tuna this year.

Claim Gloucester Draggers Are Not Depleting Maine Whiting Resources

At a recent meeting in Kittery, Maine, attended by representatives of the Fish and Wildlife Service and representatives of the Massachusetts Department of Natural Resources, fisheries research biologists said the Maine whiting are not being depleted.

Maine fishermen have charged that Gloucester draggers are depleting the whiting supply. It is reported that they may go after legislation to discourage Gloucester vessels from dragging or seining in Maine waters. The reports have the Maine fishermen pushing for a non-resident commercial fishing license fee of $1,000 to replace the present $100 fee.

Raymond Kershaw, manager of the Gloucester Whiting Association, said the scientists held that whiting are primarily an offshore fish that come in-shore in small groups. The fish that are caught are in a general movement. They do not come inshore and stay there—they move in and out. The more that are caught the more room there is for others to come in, Kershaw commented.

Offers To Increase Payments To Gloucester Community Pier

The five directors of the Gloucester Community Pier Association recently took under advisement an offer from Gloucester By-Products Inc. to agree to a land-rent boost on its fish meal plant at the pier to $10,200 per year, an increase of $3,975.

Through its attorney, C. Richard Clark, the Gloucester By-Products Inc. said, "As a result of our recent conferences with the State Department of Public Works, it appears that the financial difficulties can be straightened out if all interested parties, including the Department of Public Works, contribute to a reasonable and fair compromise."

Since the company's real estate taxes on the land and building it occupies are $9,022 and since the State Supreme Court says it may deduct the whole tax from the rent, the new agreement would net the Pier Association $1,178 per year instead of going in the red by $2,797 on that one company alone.

At the same time the directors turned down a request to lease 57,325 square feet of the pier for $9,000 per year for ten years. The request came from John Ryan, president of Gloucester Ice & Cold Storage Co. and Dehydrating Process Co. of Gloucester Inc., located on the pier. They said the Association was not in a position at the present time to enter into stable and long lease arrangements for the facilities requested.

The Board referred to the Supreme Court Decision which forces the Association to meet $80,000 annual expense with only $45,000 in revenue.

Would Build Pier For Fairhaven Fleet

Plans for the private construction of a 75,000 square-foot pier in Fairhaven to serve the fishing fleet and provide space for more fish buyers has been revealed. Joseph Perry, owner of two scallopers the *Geraldine* and the *Sandra Jane*, and treasurer of the Frank C. Taylor, Inc., marine construction firm, said an application has been made with the State Division of Waterways for a hearing. D. N. Kelley and Son, Inc., Fairhaven, has also made application for permission to construct a marine railway and three finger piers.

Capt. Dominic Catanzaro talks over a new 150-watt Northern radio-telephone aboard his 86' dragger "Ethelena" at Boston, Mass. The instrument was sold and installed by Louis Posner Marine Radio Equipment, Inc.

Scallop Haul For August Sets New Bedford Record

Landings of sea scallops in New Bedford, Mass., during August were the greatest in the history of the port for any one month. Figures recently released show that the actual weighouts of scallops totaled 2,146,000 pounds. Previous high was 2,095,000 pounds in August 1953. Value for August 1959 catch was $979,000.

The August landings marked the third month in a row and the fifth month in the port's history that the monthly scallop catch has surpassed 2 million pounds. Through the first eight months of this year, 12,295,000 pounds have been landed at New Bedford, valued at $6,364,000. Through the same period last year, 10,679,000 pounds were delivered bringing $5 million.

Other statistics show that in August over 1,300 swordfish were landed. The fish weighing a total of 289,000 pounds brought total landings for the year to 476,000 pounds. During the like period of 1958 a total of 422,000 pounds of swordfish were landed.

Landings of haddock, at that time, were nearly 2 million pounds more than the 6,494,000 pounds unloaded there during the first eight months of last year. The value of the catch is up more than $200,000 as of the end of August.

Landings of yellowtail flounder were reported as 12,230,000 pounds valued at $1,438,000 compared to 11,962,000 pounds valued at $1,154,000 during the same period of the previous year.

New Bedford Company Offers Fishing Gear

John S. Dunn Marine Service & Supply, Inc., New Bedford, Mass. stocks all types of fishing gear and marine hardware. The business is operated by John S. Dunn, who started settling fishing boat trips and handling tax work in 1943, after being with Hathaway Oil Co. for 10 years.

He opened his marine store in 1946, went into the oil business in 1951, and purchased his wharf oil terminal two years later. The firm distributes Gulf marine Diesel oils and fuel, Linen Thread Gold Medal nets and sections, New Bedford rope, American Tiger Brand wire rope, Boston & Lockport blocks, Campbell and McKay links and rings for scallop gear.

New Boat Due For New Bedford Fleet

A new vessel for the New Bedford fleet is scheduled for early launching for Capt. Jens Isaksen, and Capt. Isaac C. Norton of Edgartown. Norton is part owner of the scallopers *Edgartown* and he and Isaksen are partners in the *Ursala Norton*. The new boat replaces the *Catherine and Mary*, sold two years ago.

The new craft will be similar to the *Edgartown* and is valued in excess of $125,000. She is 88 feet in length and will be powered by a 500 hp. Caterpillar heavy-duty Diesel. She is being built by Harvey Gamage Shipyard, So. Bristol, Me.

Recondition N. E. Boats at Fairhaven

The New Bedford, Mass., dragger *Viking* owned by Hans Haram will be repowered with a Waukesha Model LRDBCM engine before the end of the year. Installation will be made at the Hathaway Machinery Co., Fairhaven.

It will be fitted with a Snow-Nabstedt 3:1 Model 3774 reverse-reduction gear and forward power take-off, and American Bosch hydraulic starting system.

The New Bedford, dragger *Mary Tapper* and the Boston dragger *Manuel F. Roderick* have had new pilot houses and steel trunks installed at the Hathaway Machinery Co., Fairhaven, A new Hathaway winch has been installed on the Portland, Maine, dragger *Vagabond*.

The dragger *Jenny* of Port Pleasant, N. J., has been at D. N. Kelley & Son Marine Railway, Fairhaven, Mass., to have her engine overhauled. The New Bedford boats, *John G. Murley, Theresa and Jean*, and the *Polaris*, have been hauled at Kelley's for general overhaul and painting.

New Bedford Holds Quality Demonstration

A grading and quality standard demonstration with raw, frozen, and cooked scallops and fish was scheduled for New Bedford, Mass., late in September. The demonstration was for representatives of management and buyers of fish and scallops in the New Bedford area. It was sponsored by the New Bedford Seafood Producers Association in cooperation with the National Fisheries Institute and the Bureau of Commercial Fisheries.

New Bedford Firm Adds New Battery Line

New Bedford Ship Supply Co., New Bedford, Mass. has added Bright Star dry cell batteries to its line of marine supplies and galley provisions. Operated by Rasmus Tonnessen, the business was established 25 years ago.

Among the products handled by the firm are Columbian rope, Linen Thread Gold Medal nets, Wickwire wire rope, Dupont and Rustoleum paints, Campbell chain, Boston & Lockport blocks, Lambeth nylon twine, U. S. Rubber and Ball Band boots, Canor-Plarex and Black Diamond clothing and Wilcox-Crittenden hardware.

Bill To Aid Delaware Bay Oysters

A bill has been sponsored by U. S. Senators Harrison A. Williams (N.J.) and John J. Williams (Del.) which would allow the Secretary of the Interior to buy 150,000 bushels of oysters and plant them in sanctuaries within the two states.

A report by Salvatore A. Bontempo, New Jersey state conservation commissioner, said about 100,000 bushels of oysters have survived the blight which has affected the Delaware Bay area. Experts think the survivors should be kept from the market to serve as brood stock for a rebirth of the industry.

Bontempo said there were signs that the disease is spreading to the Chincoteague area of Maryland and Virginia. If the rest of the East Coast is bothered by the blight, he said a strain of immune oysters from New Jersey and Delaware would be a necessity. The bill would have the states pay one third, or an estimated $600,000 dollars, to plant the immune oysters.

SOUTH ATLANTIC

Sea Scallops, Trash Fish Off North Carolina Coast

The research vessel of the Bureau of Commercial Fisheries has discovered sea scallop and trash fish potential off the coast of North Carolina. The cruise of the *Silver Bay* is the first of four which will take place within the coming year to ascertain the potential for development of the commercial fishing industry in the state. The trips are being made at the request of the North Carolina Fisheries Association.

At mid-point in the current cruise, two strong evidences of new fisheries had been found. Of great interest to the coastal industry is the discovery of traces of an extensive bed of sea scallops east of Core Banks. Taken in shrimp trawls by the *Silver Bay* was a large quantity of the scallops measuring four inches across the shell.

A similar fishery was discovered by the research vessel in the Gulf of Mexico recently, with size of the scallops about half of those found off North Carolina. That fishery is now being developed and the meats from those scallops have been bringing the fishermen nine dollars per gallon.

At the same time, fishermen in the Atlantic have begun their own experiments in the scallop fishery, procuring a special scallop rake for efficient taking of the shellfish.

It is the first time such an experiment has been done in those waters. F. J. Cativa of the *Silver Bay* says that on the second exploratory trip by the vessel, a special scallop rake will be used for a more thorough analysis of the scallop bed potential.

A second finding during the current cruise is a large indication of trash fish, which is a growing industry in all parts of the Atlantic seaboard.

The main emphasis in the boat's exploratory efforts is to ascertain the migratory patterns of the North Carolina shrimp population. The brown spotted variation is presently leaving the inlets for deep ocean waters.

It is the belief of commercial fishermen that if a pattern could be established, the season might possibly be extended considerably by taking the shrimp at sea once their habitat at sea is established.

At a recent meeting with officials of the state's Fishery Association and the work party of the *Silver Bay*, much evidence was obtained from the fishermen indicating activity far at sea by the shrimp population.

Strong emphasis will be placed on night trawling since the evidences reported show that there is a great activity during the night hours. Also a number of midwater trawls will be executed by the vessel to ascertain the type of fish that may be obtained by this method, which is not customary in North Carolina waters.

North Carolina Will Number Boats

All North Carolina boats having more than ten horsepower will be required to have numbers starting January 1, 1960, when the Coast Guard relinquishes its boat numbering functions. The State Wildlife Commission has received word that the Coast Guard has approved the State's system for numbering power boats.

Application forms for boat numbers will be available after November 1, 1959, from the Wildlife Commission. The Commission has agreed to furnish the Coast Guard with reports on boat numbering, boat accidents, and other administrative matters.

Exploratory Vessel at Morehead City

The *Silver Bay*, chartered by the U.S. Bureau of Commercial Fisheries for exploratory cruises off the coast of North Carolina and other south Atlantic States, has come to port at Morehead City, N. C.

The 60' Key West, Fla. shrimper, "Capt. Geech", is owned by Herman H. Von Harten. She is powered by a 150 hp. Murphy engine turning a 40 x 30 5-blade Columbian propeller through 2:1 Twin Disc reduction gear.

The North Carolina Fisheries Association is urging the fullest cooperation with the Bureau as other states are requesting strongly to have the vessel permanently based in their waters.

South Carolina Crabs Being Observed

The migratory habits of crabs that inhabit the South Carolina coastal waters are being watched by Federal and State officials. Specialists, aboard commercial trawlers, are tagging crabs to determine the direction and distance they migrate.

The crabs are tagged with a plastic band attached to their backs by steel wire. Any person catching a tagged crab is requested to return the band to the Fish and Wildlife Service marine laboratory in Beaufort, N. C. Twenty-five cents will be paid for each band returned.

Shrimp Congress Urges Import Curb

Directors of the National Shrimp Congress last month called for a curb on shrimp imports. They stated a 70 percent increase in imports expected to total 120 million pounds, and a record domestic supply could possibly seriously effect the domestic industry this year.

William Neblett of Key West, Florida, the organization's executive director, stated there was no desire for a complete ban on shrimp imports, but that current policies are unrestrictive.

Holland's Straits Has Seed Potential

The Maryland Tidewater Fisheries Commission believes that Holland's Straits can become a seed oyster producing area equal to the James River in Virginia. Long term planning by the Commission is meant to bring this about. The Commission is taking the view that to bring back the volume of marketable oyster production the state needs, seed oyster production must be vastly increased first.

The initial step in that direction was the recent closing of the Straits to oyster tonging. However, the Commission announced that certain areas would be opened from time to time, especially in November and December. That means, until such time that sufficient quantities of seed oysters can be grown there and be distributed to natural rocks in other parts of Somerset county and the State, the Straits will continue to be an area in which tongers can work.

Maryland Finds Soft Clams On Unproductive Oyster Bars

A bonanza for Maryland watermen has been turned up by recent surveys of inshore Bay bottoms in the form of a bumper crop of soft shell clams in Anne Arundel and Queen Anne's County waters. According to Joseph Manning, shellfish biologist at the Chesapeake Biological Laboratory, most of the quarter-million bushels of clams were found along the inshore, sandy edges of once-productive oyster bars, where oysters no longer are able to survive in commercial quantities.

The first phase of Manning's findings was followed with a precedent-breaking step by the Tidewater Fisheries Commission, which maintains control of the state's oyster bars, when parts of the oysterless bars were opened to clamming. The chartered bars in the past have been off limits for any use, regardless whether oysters were present or not.

Dr. L. Eugene Cronin, director of the Chesapeake Biological Laboratory said the survey costs were less than $1,000 and indicated a potential return of more than $1,000,000, without threatening other resources. This, he added, is possible only when changes in regulations and laws come after fact-finding by unbiased scientific efforts.

Cronin said it would be poor management to turn clam dredges out on productive oyster bars, because oysters can not survive the dredging process. On the other hand, if the facts indicate no oysters are present, it is often good management to allow clammers to work there.

It was while checking the clam population in the Sounds that Manning reported enormous concentrations of buried oyster shells in the area. Dr. H. C. Byrd, Tidewater Fisheries Commission chairman, later announced a program aimed at rehabilitating the oyster industry by using those and other shell deposits to provide cultch for new oyster beds and bars.

Proposal to Coordinate Commercial Sport Catches Made By Maryland Man

Dr. L. Eugene Cronin, director of the Chesapeake Biological Laboratory, has proposed that Maryland license all party boats and require them to report their catches, as an aid toward ending the feud between sport and commercial fishermen.

Cronin said the commercial catch in the Chesapeake Bay is well identified, but nobody knows how many fish are taken by the estimated 200,000 sports fishermen. The party boat catches would be extended by scientific methods, tested by Cronin for the last five years, to give a reasonably accurate picture of all pleasure catches. He set up a similar, successful program in Delaware during 1952 and 1953.

The commercial interests take up to 15 million pounds a year. Sportsmen spend up to 15 million dollars in the same period. Both sides have argued strongly when fish management bills come before the state assembly. Cronin predicted, "On the day when law makers can be given the facts—not wild guesses—on the relative importance of sports versus commercial activities, then we can expect relations between the two factions to become less warlike and more business like."

The proposal would require each charter boat owner to buy an annual license for $25. Failure to report catches could result in a $100 fine and loss of license. Income from the licenses would pay for analyzing the catch data.

Adrian C. Ballard

Funeral services for Adrian Carson Ballard, president of Atlanta Fish, Inc., were held last month in Norfolk, Virginia. Ballard, who made his home in Norfolk, was with Atlantic Fish, Inc., 13 years.

Atomic Pollution Research Facilities Proposed By Virginia Scientists

The concern of Virginia scientists over the threat of atomic pollution of the State's waters is reflected in proposals for greatly increased research facilities to combat the problem. Their concern is directed mainly at the discharge of atomic materials and other modern pollutants into rivers, Chesapeake Bay, and the ocean.

The Virginia Fisheries Laboratory board of administration has approved a record capital outlay—over half a million—recently submitted to the governor and which will go to the General Assembly in January. A new three story laboratory building to house radio-biological laboratories, pollution biochemistry, and biological hydrographic research will be among the research proposals. Also included are funds for a number of staff increases, including ten marine biologists and six laboratory technicians plus an information officer.

Funds to construct a small laboratory on the Eastern Shore for the study of oyster diseases and other problems will also be requested. Dr. William J. Hargis, Jr., director of the laboratory, said studies of genetics and controlled breeding for purposes of developing oysters which are resistant to mortalities and diseases are the chief hope for the future. Otherwise, he feels Virginia could possibly suffer the same fate as the Delaware Bay oyster industry.

A recommendation that Virginia and the United States Government take firm control of the proposed disposal of atomic waste materials in Virginia waters was made recently by the State Chamber of Commerce.

The Chamber's board of directors passed the recommendation, from the Committee on Seafood Conservation, in opposition to disposal of low level atomic wastes in waters less than 1,000 fathoms deep.

Virginia Men At International Congress

Nine scientists from Virginia's marine research laboratory at Gloucester Point attended the first International Oceanographic Congress held in the United Nations Building at New York last month.

Dr. William J. Hargis, Jr., director of the Virginia Fisheries Laboratory described the Congress as "an attempt to bring the world's marine scientists together to exchange data and discuss problems of mutual interest. Adequate solutions of man's marine problems can only come through the interchange of scientific information."

Hargis pointed out that the solution of these problems is absolutely essential to the wise use of the world's marine resources. Wise usage, he said, is necessary to assure adequate food, water, commerce and recreations to the constantly increasing world population.

Virginia Oysters in Big Demand

Virginia's oyster industry is experiencing an unprecedented demand for both shelled and shucked oysters, according to Walther B. Fidler, spokesman for the Rappahannock Oyster Planters Association. Packers of the Northern Neck and other areas are receiving pressing demands from out-of-state buyers due to a drop in production by northern producers.

On the York River at Cappahosic, B. M. Bunting reported oysters in fair condition at prices from $2.50 to $3.25 per bushel. At Cuthbert and Hughes Inc. in Mathews County, which owns 900 acres of private oyster beds, C. L. Hughes said prices average $6 to $7 per gallon and should hold steady through the season.

Biologists Discuss Oysters in Virginia

Six outstanding marine scientists met recently at the Virginia Fisheries Laboratory at Gloucester Point to exchange information useful in attacking biological problems of the oyster. Dr. J. G. Mackin, authority on microparasites which cause losses to planters, met with Virginia biologists Dr. J. D. Andrews, Dr. John L. Wood, and Dexter S. Haven.

Semi-Automatic Oyster Dredge Launched at Norfolk Yard

A semi-automatic "pushbutton" oyster dredge, described as the "newest, biggest and best" in the business, was launched last month at the Berkley yard of the Norfolk Shipbuilding and Drydock Corp.

The 102-foot *John P. Holloway* is the first all-steel boat specifically for oyster dredging in the Chesapeake Bay. The Diesel powered dredge is of shallow draft for year round operation and will draw six feet of water.

Equipped with two conveyor belts, the dredge is intended to be self-discharging. With a capacity of 4,000 bushels, the new dredge will require a crew of three, compared with the usual 12 or 14 required.

Virginia Fleet Finds Many Menhaden

The Virginia fleet in Chesapeake Bay has been troubled by too many fish. Some of the boats have been idled from time to time because the factories could not take care of the fish. One Reedville company which operates seven boats, has found it necessary to discontinue operating three of them for the time being. Although the fish are running in greater quantities than last year, they are smaller and yield less oil.

September Hampton Roads Landings Up

Dragger landings in the Hampton Roads, Virginia, area for September 1959, totaled 124,900 pounds compared with 79,800 pounds during the same month of the previous year. This represents an increase of 45,100 pounds. The rise was due mainly to an increase in the production of fluke which gained 71,600 pounds for a total of 120,600 pounds.

Pound net landings in Hampton Roads for September 1959 amounted to 1,226,700 pounds. During the month croakers totaled 499,000 pounds compared to 440,800 pounds in September 1958. Striped bass increased 1,900 pounds to a total of 7,600.

Virginia Finfish Picking Up

Finfish which have been of low supply this year in tidewater Virginia, are returning in increased numbers. The Eastern Shore has been getting a fairly good supply of croakers recently, fishermen report.

Weed Hinders Oyster Growth

A water plant, which oystermen claim is bothering oysters in Machodoc creek, has been identified as a fresh water pond-weed introduced from Europe. Dexter S. Haven, Virginia Fisheries Laboratory biologist, said a similar pond-weed, which is native to the state, has never invaded saltwater creeks.

But, the European cousin is able to live in salinities up to 10 parts per thousand. It is possible he said, that creeks have been fresher than usual during the past two summers and encouraged the spread of the plant. The higher salinity in the Potomac will probably check its spread. There appears to be no danger of the weed gaining a foothold in oyster beds located in salty water.

Wants Cooperation By Maryland Watermen

Chairman H. C. Byrd of the Tidewater Fisheries Commission advised watermen recently to stop arguing among themselves and start working toward overall improvement of the Maryland seafood industry. Byrd warned that reprisal laws backed by competing tidewater counties and put through the General Assembly have done considerable damage to the industry.

In the third of a series of informal get togethers to hear complaints from watermen, Byrd said the fishery laws and regulations are so confused that he doubts at times whether anybody has a right to have a license.

"Voyager" 53' shrimper owned by H. E. Widincamp of Townsend, Ga., and powered by 150 hp. D-326 Caterpillar Diesel turning a 4-blade 50 x 34 Federal propeller was built by Diesel Engine Sales, Inc., St. Augustine, Fla. Other equipment includes Yocam batteries, Ritchie Compass, 750 watt Onan light plant, Goodrich Cutless bearing, and 3" Tobin Bronze shaft.

Florida Oyster Prospects Good

Florida's $1 million oyster industry, centered in the Apalachicola Bay area, appears destined for a record season. Unusually favorable weather conditions along the Florida coast plus a drop in production in other areas, indicates heavy demand and high prices, according to Robert M. Ingle, assistant director of the State Conservation Department.

Heavy rains that have occurred since January, with resultant high rivers and creeks, have helped kill pests that are harmful to oysters, he explained. Ingle reported processors and fish houses have completed refurnishing their plants to qualify for the operating certificates required by the State Board of Health as of September 1. Large working forces have been lined up by optimistic producers and processors.

Florida Prohibits Night Shrimping

Night shrimping in Florida's Atlantic waters has been suspended until May 31, the State Conservation Department has announced. Ernest Mitts, conservation director, said the action has been taken under a new law which imposes a penalty up to $500 fine and six months in jail for violations.

Daytime shrimping in the Atlantic will be allowed and live bait producers may operate at night under a permit, Mitts said.

Shrimp Treaty With Cuba Proposed

A proposed treaty with Cuba and the United States to guard against depletion of the pink shrimp yield in the Dry Tortugas area off the Florida Keys is under consideration in Cuba, Fish and Wildlife officials have announced.

The conservation pact has been approved administratively by the United States, but it will not be sent to the Senate for ratification until Cuba has signed it, officials said. The treaty provides for a two-nation conservation committee to make sure that the maximum sustained yield of shrimp around the Tortugas is assured.

GULF OF MEXICO

Alabama Tests Egg Crates For Oyster Spawn Setting

The Alabama Department of Conservation is conducting a series of experiments on planting oyster bottoms with egg-crate fillers to catch spawn. The cardboard fillers are dipped into a soupy mixture of cement and allowed to harden.

The fillers, W. J. Demoran, Gulf Coast Research Laboratory biologist said, afford more surface for oyster spawn to attach and are easier to prepare and plant than shells. They are no more expensive than shells he added.

A part of the Alabama Seafood Division's oyster culture program, the filler experiments could be a big aid in the event of a shell shortage, according to George Allen, chief of the division. Persons can get the fillers where they might not be able to procure oyster shells, he said.

The division foresees a possible increase in leasing of oyster bottoms by individuals. The new planting method could be of great help on leased bottoms officials believe. Allen said the oyster season, which opened last month, seems to be better than it was last year. The oysters are plentiful and large he said.

The Alabama Department of Conservation completed planting 1,000 barrels of oyster shells recently in Portersville Bay. It was an experiment on fall planting. Demoran said more emphasis will be placed on fall planting if the shells catch enough spawn and if the survival rate is sufficiently high.

Alabama Areas Open to Night Shrimping

Night-shrimping in Alabama waters of Mississippi Sound was opened last month by Alabama Seafood Division officials. George Allen, chief of the division, said the Sound will be opened from 6 pm. to 6 am.

The area opened includes those waters west of a line extending from the west end of Dauphin Island woods to Dauphin Island range beacon, then northwesterly to the end of Barren Point, then west to the south end of Coffee Island. The area is located generally in the western portion of the Mississippi Sound.

Portersville Bay and Heron Bay will remain closed to shrimping as in the past. Allen said the reason for opening the waters of the Sound to night-shrimping is to let shrimpers utilize the large number of brown shrimp now found in those waters.

Alabama Department Wants Boat Hoist

The Conservation Department of Alabama is advertising for bids on construction of a boat hoist for the Seafoods Division at Bayou La Batre. George Allen, chief of the division, said the hoist would pay for itself in a short time. Located at the division office at the Bayou, it will enable the division to do its own maintenance work on the five division boats.

New Perdido Pass Bridge Plan

Alabama state highway officials are studying a revised design for the bridge across Perdido Pass at Alabama Pt. It is an effort to raise the piers, on which the superstructure rests, so that dredges may be used to keep the intercoastal channel clear of sand.

Commercial fishermen have complained about the clogging of the channel with sand, deposited by pounding tides. If the piers are raised, the highway department is hopeful of getting the federal government to keep the channel open.

May Close Texas Reefs if Needed

Though oyster reefs are normally open to commercial dredging from September 1 to March 31, the Texas Fish and Game Commission has delegated authority to Howard Dodgen, executive secretary, to close any reef to dredges, when biological studies indicate the need. The oyster season is open in Galveston and Chambers counties from November 1 to March 31.

Gulf States Marine Fisheries Commission Holds Annual Meeting

The Gulf States Marine Fisheries Commission held its tenth annual meeting at Corpus Christi, Texas, October 15 and 16, 1959. The general session on the 15th was held in the Plaza Hotel while the other sessions took place in the Driscoll Hotel.

The meeting was opened by State Senator Bruce Reagan and assistant secretary of the Interior, Ross Leffler. Commissioner Harry P. Burleigh of the United States Study Commission, Austin, addressed the group on plans and purposes of the Commission. Speaking on shellfish and radioactivity was James B. Lackey, professor of sanitary science, University of Florida.

The Estuarine Technical Coordinating Committee members presented summaries, pointing up by states the extent of additional information needed with regard to the estaurine areas proper and contributing watersheds.

George A. Rounsefell, Bureau of Commercial Fisheries Galveston, discussed the results of the October 14 meeting of a special committee at Rockport, Texas. The committee met to draft an expanded program for the marking of shrimp through the use of stains. Harvey Bullis, Jr. of the Bureau's Pascagoula, Mississippi, office presented movies on the underwater study of shrimp trawls in action.

Texas Shrimp Landings Up 39 Percent

Shrimping landings at Texas ports for August totaled 9,976,300 pounds heads off, according to United States Fish and Wildlife Service. This represents an increase of 39 percent over the same month in 1958.

Vessels are shrimping along the coast from Brownsville to Sabine Pass in water from 2 to 30 fathoms as shrimp trawlers from the entire Gulf area concentrated in Texas coastal waters in late summer and early fall.

C. E. Nickerson, Fish and Wildlife statistician, reported prices on 15 to 20 count headless shrimp ranged from 61 cents to 75 cents ex-vessel while the spread on 31 to 35 count was 40 to 44 cents.

Aransas Pass Holds Shrimp-O-Ree

One of the concluding events of the three day Texas celebration, the Aransas Pass Shrimp-O-Ree, was a review of the Coastal Bend Command, First Flotilla, of the Texas Navy. A dozen Texas Navy admirals headed by Joseph B. Hutchinson, personal representative of Governor Price Daniel, were present for the event. Led by the trawler *Bluebonnet*, flagship of the Coastal Bend Command, more than two dozen decorated vessels circled Conn Brown Harbor. Winning first prize as the best decorated boat was the *KT II*, skippered by E. H. Carter.

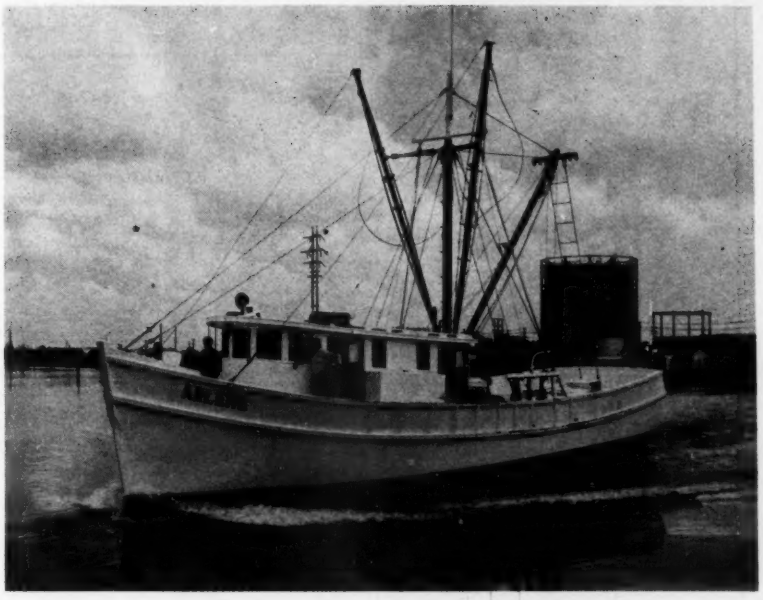
Barney Sanders, marine fuel dealer was crowned King Shrimp-O-Ree and Miss Florence Sims was chosen as Queen Shrimp-O-Ree. Other events of the Shrimp-O-Ree sponsored by the Aransas Pass Chamber of Commerce and the Aransas Shrimp Association, included a football game, street dance, cyclecade, parade, and shrimp boil.

Texas Artificial Reefs Remain Unmarked

The question of installing and maintaining lighted buoys, at each artificial reef recently constructed off the Texas coast, remained unanswered after the August meeting of the Game and Fish Commission in Austin.

Howard Lee, director of Coastal Fisheries for the Commission, said that the cost of lighted buoys would be $2,400 per unit, and that another $1,000 would be needed every six months to keep one buoy repaired and serviced.

Definite action was postponed until another meeting. In the meantime, the Commission's man-made reefs will remain unmarked for the balance of the fishing season.



Built for the R. Leloup Shrimp Co., Brownsville, Tex., by Diesel Engine Sales, Inc., St. Augustine, Fla., the "Arlene" is powered by a D342 Caterpillar Diesel rated 150 hp. with 3:1 reduction gear turning a 50 x 34 wheel. Included in the equipment are 1500 Delco-Remy generator, 1500-watt Petter Diesel light plant and Yocam batteries.

Cedar Bayou Dredging Near Completion

Heavy rains and tides opened the Cedar Bayou channel between the Gulf of Mexico and Mesquite Bay just before contractors expected to begin dredging. Widening the mouth and dredging of the pass on the Gulf shore is now practically complete and the first phase of the fish pass will be completed at a contract price of $198,300.

Would Tie Louisiana Shrimp Interests To National Unit

James Summergill, president of the Louisiana Shrimp Association said recently that "Louisiana is getting a free ride, and it is not right. The National Shrimp Congress is fighting our battles and the state is not contributing one cent."

Summergill was referring to the Southeastern Fisheries Association and the The Texas Shrimp Association which make up the Shrimp Congress. Each of the two organizations is being assessed $10,000 to meet the high budget needed to carry on the move to stabilize imports believed necessary to strengthen the industry.

He said that beginning immediately, the Louisiana association will contact the industry and allied businesses in the state so that the group can join the Shrimp Congress and participate in its activities.

Louisiana Shrimp Law Effective

The shrimp industry is in better shape than it has been for several years, Steve Harmon, editor of the Louisiana Conservationist reported recently. Stressing that the State Wildlife and Fisheries Commission's vigilance in the enforcement of the game and fish laws will not lessen, Harmon used figures to demonstrate the effectiveness of the shrimp law.

He said 56 violations of the law were recorded by the enforcement division in 1958 the year the law was initiated by the Legislature. Ten of these were by out of state people. However during the first part of 1959, only ten violators have been apprehended. Five were sport fishermen trawling for bait shrimp. Of the remaining five, four were from out of state.

Bay St. Louis Man on Seafood Body

Kenneth P. Whitfield of Bay St. Louis, Mississippi, has been appointed to fill the unexpired term of the late Walter Gex on the Mississippi Seafood Commission.

Stating that he is presently gathering information relative to improvement of the seafood industry, he stressed that the state has only begun to scratch the surface of its economic wealth in the plains of South Mississippi—particularly the Gulf Coast.

Mississippi Has Three Inch Culling Law

Because of the favorable results last year, a three inch culling law was put into operation for Mississippi oyster reefs during the last week of September, according to Clarence Canaan, chief inspector of the Mississippi Seafood Commission.

Gulf Landings For First Eight Months

Landings of seafoods at Gulf ports for the first eight months of 1959 show an increase of about 24 percent over the same period of 1958. Oysters increased ten percent to 354,030 barrels, edible finfish rose to 6.1 million pounds for an increase of eight percent, while heads off shrimp at 56.6 million pounds showed a rise of seven percent. Blue crabs dropped about one percent for a total of 6.9 million pounds.

Lampra Seining Tried In Gulf

The *Oregon*, United States Fish and Wildlife Service research vessel, has returned from a 14-day experimental lampra seining cruise along the Mississippi coast. A standard 33-foot menhaden purse boat with 48 horsepower engine was used to set and retrieve the seine.

Five daylight sets were made using the one boat method. Four daylight and six night sets were made with a 20-foot seine skiff with the purse boat. Night sets were made on fish attracted to lights from a light skiff powered by 2½ kw generator.

Visual spotting from the vessel was used for location of school fish. Steady to moderate winds prevailed throughout the cruise and no concentrated schools were located. Small catches were made of menhaden, razor bellies, spanish mackerel, anchovies and croakers.

Find Tuna Concentrations In Gulf

The United States Bureau of Commercial Fisheries exploratory vessel, *Silver Bay*, completing a nine-day cruise in Gulf of Mexico waters, reported numerous mixed schools of skipjack and blackfin tuna between Campeche Bank and the North Gulf. The concentrations were spotted in the early morning and in the late afternoon. Also observed was a large gathering of very small unidentified tuna.

Would Use Trawl Nets In Lake Michigan Waters

The Wisconsin Conservation Department has been watching trawling experiments in state waters with interest. Many Lake Michigan commercial fishermen assert that chub catches have been too small to make set-net fishing profitable.

They point out that by using trawls, more "junk" fish such as shad, bloaters, and smelt can be taken for sale as mink feed. They say it would also leave more lake space for valuable species such as chubs and lake trout.

Nets Do Not Effect Pike, Whitefish Populations

Although it may be true commercial fishing nets prevent some fish from reaching their spawning grounds, the number taken each year could have practically no effect on the decline in the pike and whitefish population in Lake Erie.

That is the view of Dr. U. B. Stone, district fisheries manager for the New York State Department of Conservation, who is being deluged with theories concerning the fishing conditions in the lakes.

Despite the use of nets during the spawning season, Dr. Stone pointed out, yellow and blue pike and whitefish have been plentiful during good fishing years. He is sticking to his earlier argument that diminishing pike and whitefish populations are being caused by over-abundance of smelts and gizzard shad.

Stone voiced opposition with those who would ban fishermen from laying nets during the spawning season, or restrict the size of nets. "When you consider any management of Lake Erie," he said, "you have to consider the lake as a whole, not just the portion in New York."

Lake Erie Explorations

During the period August 27 to September 6, the *Active* continued successful exploratory smelt fishing operations in Eastern Lake Erie.

Thirty tows were completed between Fairport Harbor, Ohio and Sturgeon Point, New York, in depths of 5 to 25 fathoms using a 50-foot, two-seam, balloon trawl with a 1½ inch mesh cod end.

Catches ranged from trace amounts of burbot, white suckers, and whitefish. Best fishing results were obtained in the 10 to 13 fathom depths north of Dunkirk, New York and northwest of Erie, Pennsylvania.

Large surface schools of emerald shiners were observed daily during the cruise period.

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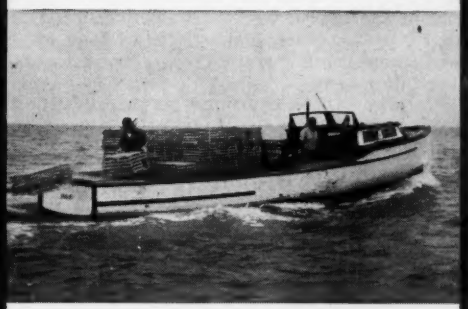

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Fabritank rubberized fabric fuel tanks by Firestone may be collapsed and stored for reuse after fuel has been used up. Used on several West Coast boats to save cost of disposable metal tanks.

Impressive Catches of White Perch Made on the Lakes

In practically all waters of the Great Lakes where yellow perch are taken commercially, yields have been generally impressive. For a while, there were more perch available than the demand could absorb and consequently there was a drop in the market. As the supply dropped and the demand began to climb again, the market remained low due to Minnesota fish suddenly hitting the market.

From Lake Superior yields of whitefish before the October closure of the season were noticeably increasing in several areas. On the other hand, takes of lake herring were slowly increasing toward the big annual harvests late in the fall season.

On Green Bay, where both chub and perch production just dropped off after heavy yields, lake herring were beginning to show up in good commercial quantity. Carp and sheephead producers were getting a lot of fish but found it hard to get markets for them. In the Bay de Noc area some walleyes were being taken, but most of them were being sold locally.

Commercial production from Lake Michigan has generally been consistent with lots of perch, chub, carp, sheephead, bullheads, etc. However yellow pike were somewhat scarce.

From Saginaw Bay, commercial producers were coming up with good catches of perch and chub, bullheads, sheephead, but not too many pike. In the northern channel area, whitefish catches were fair and some trout were taken in gill nets. Fishing has been generally spotty however, in northern waters of Lake Huron. In the midlake area and around the straits, herring yields were not too bad with prospects of herring moving into the bay areas in large numbers.

A lot of yellow perch were taken by Ohio trap netters. Catches of carp and sheephead were heavy, while not much was reported in catches of pike. In Michigan waters, however, some fair catches of yellow pike were reportedly made recently. In New York and Pennsylvania waters catches were generally light to medium with whitefish in light production. Whitefish were mostly of small size.

Michigan Lake Trout Coming Back

Commercial fishermen say that lake trout, practically wiped out by the sea lamprey, have been starting to make a comeback in Lake Michigan. Tiny lake trout, of which several thousand were dumped into the lake north of Port Washington early this year, have been found in nets more than 20 miles south of the city and they have grown to about six inches.

PACIFIC COAST

Re-usable Auxiliary Fuel Tanks For Use on West Coast Clippers

Lightweight rubberized fabric tanks that can be collapsed into small bundles when empty are being used by commercial fishing fleets on the West Coast to replace steel drums for auxiliary fuel.

Called Fabritank by the manufacturers, Firestone Tire and Rubber Company of Akron Ohio, the unit weighs only 175 pounds yet has capacity of 1,550 gallons. Since it can be collapsed into a small area after the fuel is exhausted, it can be stowed on board in some out of the way location such as the roof of the pilot house.

Prior to the introduction of Fabritanks, expendable 50-gallon drums were generally used for auxiliary fuel. After the drums are emptied, they are tossed overboard to make more room, resulting in an unrecoverable loss to the owner. Claims of $150 to $200 savings per trip are made.

The Fisherman's Cooperative Association and the Star-Kist Tuna Company in San Pedro, California, have installed the new type tanks on two tuna clippers. While in port, the tanks are lashed into place in a cribbed portion of the refrigerated fish hold. It is then filled with fuel which is transferred to the main fuel tanks at sea as required. When the Fabritank is emptied, it is removed leaving the crib free of fuel contamination and ready for fish storage.

California Salmon Catch Over Last Year

The California Salmon catch during the five-month season ending September 15 will total over five million pounds according to preliminary reports from the California Fish and Game Department. This is one million pounds better than last year.

Fishing was at its best in the ocean off San Francisco. In July more than three million pounds were landed, but catches tapered off during the late summer.

Storm Drives California Boats To Port

A vicious Pacific storm drove the albacore fleet into California harbors from Moss Landing to Eureka late in September, taxing facilities to capacity. The 500 boats jammed at Humbolt Bay were estimated as the largest concentration of vessels in the harbor's history.

Canneries, barges, hoists, and refrigeration gear were being operated 24 hours a day to get the fish ashore. An emergency fleet of refrigerated trucks hauled fish to canneries in San Francisco, Oregon, and Washington.

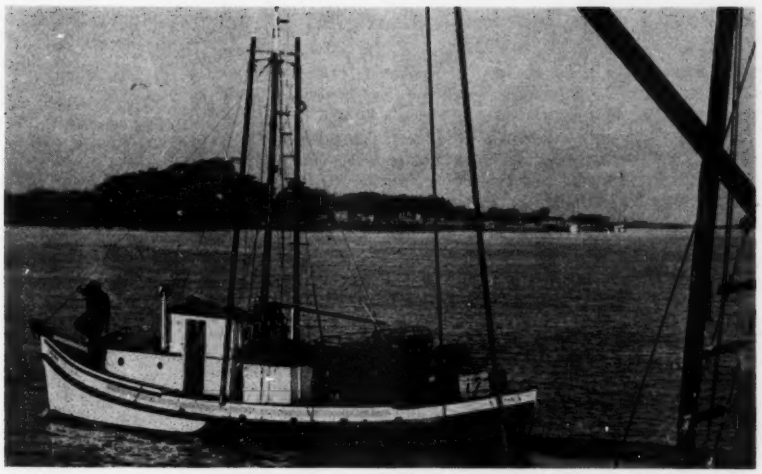
As the fleet unloaded, the price per ton on tuna dropped to $275 and within a week had lowered another $25. Most skippers planned to make one more trip or catch what they could on the way to their respective home ports.

Fish Observation Bubble Successful

The research vessel, *Charles H. Gilbert*, returned to Honolulu last month after a study of skipjack tuna using a new blister-type underwater observation chamber From that vantage point, seven feet beneath the surface, observers watched tuna activity during fishing. They recorded fish behavior on film and recorded personal impressions.

The blister proved an outstanding success as it was not only free from annoying bubbles, which limited the use of previous chambers, but its size enabled observers to watch tuna behavior for several hours at a time.

The new observation chamber was superior to underwater television. Although television occasionally saw farther than the human eye or a movie camera, its adjustment and operation were too delicate for rugged conditions normally prevailing during tuna fishing.



Loaded with crab fishing gear, the 36-foot troller "Lavona" heads away from the Eureka, Cal. dock. Owned by Dale and Maureen Horn of Ferndale, Cal., and skippered by Frank Lampi of Fort Bragg, the vessel is powered with a Chrysler engine.

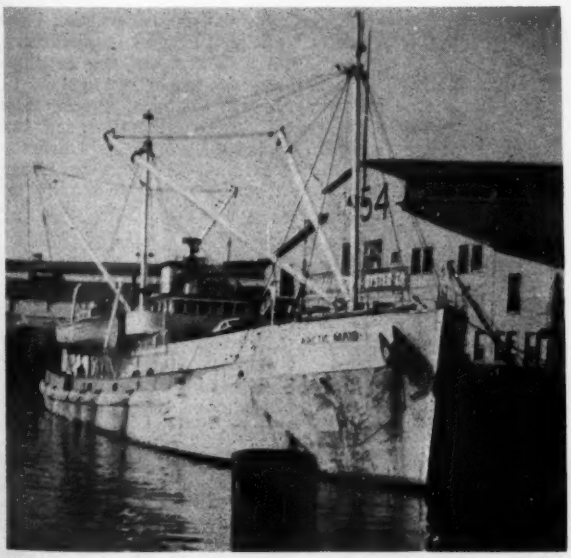
Agreement on Alaska Crab Prices

A month long dispute between Alaskan king crab fishermen and cannery operators was settled late in September with agreement of prices to be paid for the catches. Fishermen voted recently to accept cannery offers of eight cents a pound for crab delivered to shore operations and seven cents per pound when delivered to floating tenders.

Crab operations in the Kodiak area came to a halt August 22 by the dispute. The eight-cent rate at the canneries is the same as last year. The major change was elimination of a two-cent-per-pound charge that fishermen paid for delivery of crab catches by tender.

Sea Lion Studies in Alaska

The Research Fishery Institute of Seattle, Washington, under a contract from the Bureau of Commercial fisheries, is continuing its studies of Alaskan sea lions. A predator on salmon and halibut, the sea lion often causes considerable damage to fishing gear. The studies conducted for the last three years have shown much concerning distribution, abundance, feeding habits, general biology, and methods of harvesting sea lions.



"Arctic Maid", 186' fishing vessel owned by Arctic Maid Fisheries Co. and skippered by firm's vice-pres., Homer Kyros, recently returned from a research expedition near Alaska conducted by the F & WS to find means of combating sea lion destruction of salmon.

Efforts made this year have been to determine whether the sea lions numbers might be reduced by initiating a commercial fishery for the animals. A total of 616 sea lions was killed and about 100 tons of sea lion meat and 18,000 pounds of livers were rendered.

Predicts Large Alaska Salmon Pack

Alaska's salmon pack will revive next year, the Alaskan Regional Director of the Bureau of Commercial Fisheries John Gharrett, has predicted. Gharrett blamed this year's disappointing catch on convergence of poor salmon runs throughout the state.

Albacore Catches Good Off Oregon

Fishermen reported last month that albacore catches were continuing to improve off northern Oregon. The turn for the better came after two weeks of sparse catches in July.

Record Egg Take Predicted For Oregon Salmon Hatcheries

For the third year, more salmon are at the gates of Spring Creek Salmon Cultural Station than the hatcherymen of the Fish and Wildlife Service can handle. The holding ponds are already full and 4,500 excess males have been killed and frozen for use as feed. In the process of artificial propagation, the sperm from one male can fertilize the eggs of several females—thus making a large number of males excessive.

Last year the hatcherymen took 72,000,000 eggs at Spring Creek, more than double the previous high year of 1954. The total take at the Federal stations this year topped 112,000,000 and may top 1958, officials feel. Dr. L. Edward Perry, director of the Bureau of Commercial Fisheries Columbia River Program office at Portland, Oregon, said there is every indication that the artificial propagation program is adding materially to the commercial fishery of the Pacific coast.

Columbia River Talks Proposed

A two-point program, to settle the Oregon-Washington controversy over salmon fishing in the mouth of the Columbia River, was suggested recently by Washington governor Rosellini. The governor recommended that legislative interim committees of the two states meet to iron out the dispute. He also asked that Oregon police check fishermen only on the shore.

"I feel that by acting now we can correct a situation that will become deleterious to both states," Rosellini said. "A series of retaliatory laws, undue restrictions and community feuds will damage our states if allowed to flourish."

Sockeye Catch Best in 56 Years For Cycle

Although 1959 is considered the weak year of the four year sockeye salmon cycle, the Fraser River catch of the fish this year is 50 percent greater than any comparable cycle year for 56 years.

The report, after a check of International Pacific Salmon Commission records is regarded as evidence that the rehabilitation of the Fraser River fisheries is proving successful. United States fishermen by September first had already taken 1,700,000 sockeye and the Canadians about 1,200,000. Commission experts had predicted about 1,000,000 sockeye each for the American and Canadian fleets.

Seattle Landings For September

Seattle, Washington's otter trawl fishery showed a drop in production for September 1959 compared with the same month of the previous year. However, Pacific ocean perch showed an increase of 157,400 pounds, Dover sole an increase of 86,100 pounds, Rockfish a gain of 21,500 pounds and rock sole rose 5,000 pounds.

The Seattle halibut fleet landings for the month amounted to 1,549,800 pounds with rockfish and ling cod above the previous September's production while halibut and sablefish showed declines.

Plan For International Pacific Fisheries Meeting

The United States section of the International Pacific Fisheries Commission has begun a series of study meetings in preparation for the full commission meeting in Seattle, Washington, November 2 to 7.

The United States delegation is expected to press again for revision of the North Pacific Treaty line dividing the Japanese and North American fishing fleets. The line set several years ago as a temporary boundary is at 175 degrees west longitude.

Since that time, scientists have determined that some salmon spawned in North American streams migrate to the Japanese side of the line, where they may be caught by the Japanese.

"We are reviewing all our summer research in the North Pacific and the fishing operations of the Japanese and the Russians," said Milton E. Brooding of San Francisco, section chairman. Brooding said the section is also discussing the future administration of fisheries in Alaskan waters.

Washington Controls Salmon Fishery

All commercial salmon fishing in Washington waters is now under the jurisdiction of the State Department of Fisheries with exception of waters around Point Roberts, the International Pacific Salmon Fisheries Commission has announced.

Fishing is now permitted west of a line running south from the southeast tip of Point Roberts to the International boundary. The International Commission regulates sockeye and pink salmon fishing in certain waters of Washington, Oregon, and British Columbia.

Washington Group at Ocean Parley

Several University of Washington scientists presented papers at the first International Oceanographic Congress in New York City last month. Dr. Thomas G. Thompson, University oceanographer, lead a discussion on cycles of organic and inorganic substances in the sea.

Washington Salmon Season Extended

Heavy weather, which kept fishermen in port, swelled Washington spawning streams and lured pink salmon upstream. With the streams in better condition than in previous pink salmon cycle years of 1955 and 1957, the International Pacific Salmon Fisheries Commission opened areas one and two (Strait of Juan de Fuca and San Juan Islands) for the full four days one week last month.

The Washington state Fisheries Department decided later to extend its announced three day week to four in Puget Sound waters inside the Initiative 77 line, extending the season an extra day.

Soviet Salmon Catch Down Says Washington Man

W. C. Arnold, managing director of Alaska Salmon Industry, Inc., said on his return from a 30-day Russian visit, that the Russian salmon catch this year is off 40 percent from the previous season. Arnold spent six days at two combines—canneries and fish—processing centers—on the Kamchatka Peninsula. The area is the center of the Soviet Pacific salmon effort, with 24 plants.

Arnold estimated that two thirds of the Russian catch is canned. The rest is salted or frozen, with the bulk of the entire production shipped to Western Russia. He said the canning equipment was installed in the 1930's by American workers. Most of it was manufactured in Seattle.

The Soviet plants, Arnold said, pack about 60 cans a minute, using 75 workers on a line. In contrast, modern Alaskan canneries pack about 300 cans a minute with 35 workers to a line.

Most of the Russian salmon catch he said was from traps. Bottom fish were from trawlers, and herring catch was netted with purse seines virtually identical to those used by American fishermen. The party Arnold was with got a look at some of the Russian Bering Sea vessels, which this year began exploratory fishing off Western Alaska. The main effort seemed to be for bottom fish. Soviet deep-sea efforts are scheduled off Alaska again next season.

Individual Oyster Freezing Tested At Seattle Lab

Current research on the Pacific oysters by the Seattle Technological Laboratory of the Bureau of Commercial Fisheries in Seattle, Washington, has been confined to methods of freezing. The major objective of this phase of the work is to produce an individually frozen oyster.

Two methods have been attempted; immersion in brine-glucose solutions of various concentrations, and blast freezing. Immersion freezing proved unsatisfactory, due to salt pick-up by the oyster meats, and the development of rancidity during subsequent frozen storage.

The blast freezing method has been very successful when the frozen oysters were glazed with either ice, two percent corn syrups, or one percent ascorbic acid prior to storage. The results indicate that individually frozen oysters may have commercial value from the standpoint of ease of separation and good storage life.

Seminar on Washington Fish Farming

Washington held a three-day school on its new fish-farming program at Hoodsport recently, with experts from the United States and Canada participating. Curriculum included oceanography, engineering and hydraulic problems, as they pertain to fish farming, fish disease, hatchery management of fish farms, development of artificial spawning channels at major power dams, and various aspects of clam and oyster farming.

Soviet Experts to Visit Seattle

A group of Russian fishery experts is expected to visit Seattle, Washington, soon, according to an Interior Department official. The Russians will also visit Portland, Oregon and Alaska. The Soviet visit will represent an exchange for a visit to Russia by a group of Americans, including three Seattle men.

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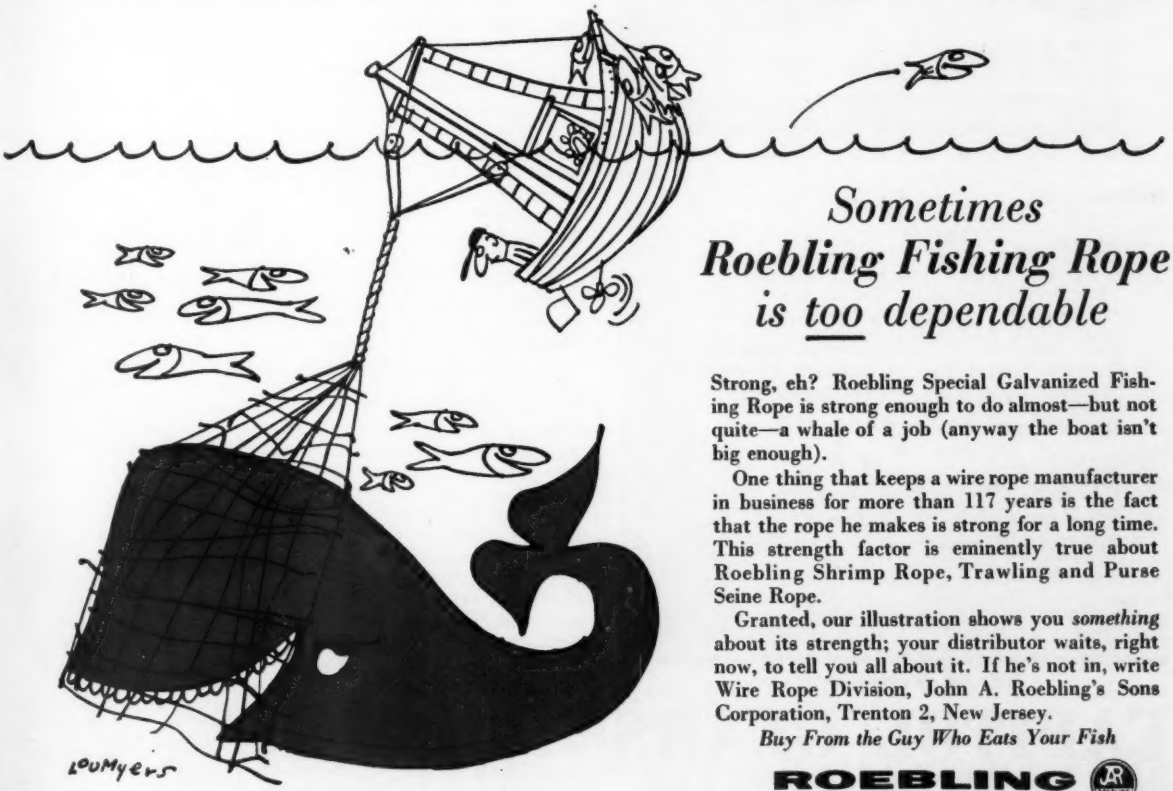

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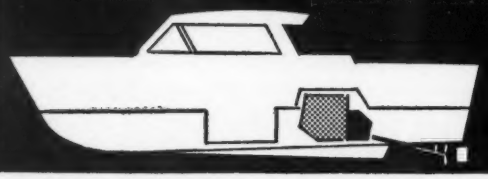

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Fish Quality Controls Stressed

(*Continued from page 7*)

ing time of substandard fish by some processors and producers did not further the good will of the industry in general.

The antibiotic, chlortetracycline, (commonly referred to as Aureomycin or for food grade as Acronize) has recently received acceptance by the Food and Drug Administration for use as a dip or in storage ice.

In its use for retarding bacterial growth in fish, scallop meats, and unpeeled shrimp, a solution containing a maximum of 5 p.p.m. chlortetracycline is allowable. Further, such application is confined to fresh, uncooked, unfrozen fish and shellfish.

The use of the antibiotic in reducing spoilage in fish indicates promising applications under controlled conditions. The matter of adequate sanitation is a definite prerequisite to its use. Increasing the strength of dipping solutions in lieu of cleanliness and refrigeration has little, if any, advantage.

Present controls of chlortetracycline utilization in many areas is rather superficial. To remedy this, one manufacturer of the antibiotic proposes to control its use by supplying fish processors, canners and producers by franchise. The franchise states "The best use of the antibiotic is in no larger quantities than necessary and in conjunction with the best sanitary practices."

That situation seems to indicate there would be a definite advantage to both industry and consuming public if control of antibiotics as food preservatives rests with state fishery regulatory agencies.

State Control of Extended Territorial Waters

The international rules which have long governed high seas fisheries are undergoing drastic change, said Fredrick L. Zimmerman, chairman of the Commission's Legal Committee in a pre-meeting report. Symbolic of this is the action of the 1958 United Nations Conference of the Law of the Sea and its approval of the Convention which deals with territorial waters extension.

An even greater change seems inevitable, he said, in that the renewed conference scheduled for next year will probably approve a broader definition of territorial and contiguous waters, within which fisheries will be reserved to the coastal nation.

Signs of the change were evident in the 1958 conference when Canada, Great Britain and the United States—proponents of the three-mile limit—suggested possible acceptance of formulae which would broaden the jurisdiction of the coastal nation over fisheries beyond this traditional limit.

The United States proposed that the territorial sea be enlarged to six miles with an additional six miles belt beyond, in which the coastal nation would have exclusive fishery jurisdiction subject to historical rights where another nation had fished for a period of ten years.

However, any recognition or adoption of changes by the U. S. Government in the territorial sea, would raise immediate questions in respect to state law and administration. It must be realized that state law and jurisdiction would not automatically move outward to the new limits.

Beyond its possible merits, such action will raise problems for state governments in our coastal regions. Since the U. S. has adhered to the three-mile limit and the states have recognized similar limits off their coasts, the effect has been to establish federal jurisdiction for federal purposes and state jurisdiction for state purposes. Both the actual activities of federal and state governments and their respective power to regulate the conduct and right of private persons is involved.

At present, the states exercise jurisdiction for a variety of purposes in the territorial sea. They have responsibility and authority over areas lying within the national jurisdiction of the U. S., whether land or water. It is felt, therefore, they should exercise the same jurisdiction over an expanded territorial belt as they do now over the three-mile zone. Any other result, it is felt, could lead

to confusion and handicap the states' administration in fisheries management.

The courts in recent years have used the doctrine of preemption to exclude the states from areas which the courts said have been "occupied" in some manner by federal action. Most dismissals of state authority which have caused complaint, have occurred not through specific Congressional action, but as a matter of judicial interpretations, or assertions of authority, by federal administrative agencies.

It has been offered, that in the absence of already operative state laws, the interval between the change of international rule and possible resulting state action, could harm state jurisdiction between the present three-mile limit and the new seaward limit.

The Atlantic States Marine Fisheries Commission, therefore, has renewed its 1958 recommendation that the states enact a model bill. In brief, it declares jurisdiction and ownership of offshore waters to be in the state and defines such waters as being whatever they may be under U. S. law, international agreement, or agreements to which the state itself is a party.

Under this law the states would be enabled to exercise jurisdiction over additional waters within the expanded territorial belt equivalent to that which they now exercise within the three mile zone.

West Coast Tuna Fishery

(*Continued from page 8*)

order aboard the clippers, using live bait, a feather lure, or a bright metal bare hook. On locating a school, live bait is thrown overboard to attract the fish to the vessel. When the tuna run in to take the bait, the fishermen cast barbless hooks overboard. In their desire to take the bait, the fish also take the hooks. If the fish average less than thirty pounds, one man can take and land the individual fish. If they range between 30 and 50 pounds, two men are required. For fish over 50 pounds, three men team together to land them. This is the only fishery where the crew wears crash helmets to protect themselves from fish being heaved aboard by fellow fishermen.

Many trips last as long as 90 days, the clippers must be equipped to serve as home for the crew during that time. The majority have the hold divided into watertight compartments to hold the frozen tuna on the return trip. Some clippers carry planes to spot the tuna schools, and are equipped to travel as far as 10,000 miles. Ownership is a cooperative venture.

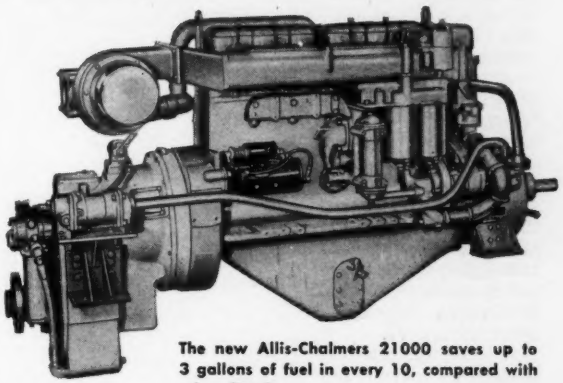
The purse seiners or netters account for the next greatest share of the tuna catch. These craft usually are not as large as the clippers and have a smaller cruising radius and a smaller capacity. They were originally designed for sardine and mackerel fishing and usually purse those species during the fall. Larger purse seiners may fish tuna the year round and generally catch the same species as the clippers. Purse seiners use a large net to encircle the schools of fish.

At present there is a trend toward conversion of baitboats to seining. Many of the larger clippers, during the past year have made the change, including the *Southern Pacific* which at the time was one of the top producers. The conversion trend has been moved by advancements in seining, mainly the development of nylon nets and of power blocks to draw them in.

Another factor important in the change-over is the general confinement of bait fishing to skipjack. With nets, the fishermen feel they can go after bluefin and yellowfin, which in most cases bring in more money. Also, they claim equal catches with seines in less time.

The third category of boats engaged in the tuna fishery is the small albacore troller. In this type of fishery lures of varying length are trolled astern from two trolling poles. Three or four lines are attached to each pole and so rigged that they can be pulled in separately. These boats usually are about 60 feet in length. Halibut boats and salmon trollers often enter the albacore fishery during good runs.

MOST ECONOMICAL DIESEL OF ITS KIND...



The new Allis-Chalmers 21000 saves up to 3 gallons of fuel in every 10, compared with other diesels.

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Here's the heavy-duty marine diesel that was tested under full load with half the connecting rod and main bearings cut away. It was deliberately run hot and with only partial lubrication. It was operated with intentionally weakened parts and with imbalances. Its stamina was tested far beyond toughest actual use to prove that its great economy was more than matched with ability to take it. Hundreds of field reports show the difference between this great engine and ordinary diesels!

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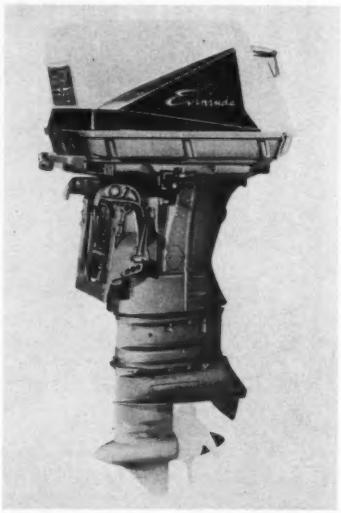
EQUIPMENT and SUPPLY NEWS

Evinrude Features New 75 hp. Model

With a 50 percent increase in horsepower, new streamlined lower unit, and an automatic choke, the new 75 hp. Starflite of eight new models for 1960 introduced by Evinrude Motors, Milwaukee, Wisc. The powerful, four-cylinder, V-type newcomer also incorporates double-action hydraulic shock absorbers and offers a selection of three propellers, plus the other features of Evinrude's four-cylinder 50 hp. Vs.



1960 Evinrude 75 hp. outboard Starflite II features automatic choke and streamlined lower unit.

A 40 hp. model Lark II ranks next in line, with its counterpart a new 40 hp. Big Twin, a manual-start motor. Next is the 18 hp. Fastwin, a manual-start unit which may be converted to electric starting at the owners option. The 10 hp. Sportwin, the 5.5 hp. Fisherman, and the three hp. Lightwin and Ducktwin which have found favor as auxiliary units, complete the Evinrude line.

Evinrude has installed on the Starflite II and Lark II an automatic choke to eliminate the human element in starting the motor. It makes for easier starting and more efficient operation by assuring automatically the proper fuel and air mixture to the carburetor.

Double-action hydraulic shock absorbers on the Starflite II are to safeguard against damage from striking submerged objects. A new transom bracket for the Starflite II bolts directly to the transom and eliminates the use of screw clamps. In turn, the motor fits into the bracket and is bolted in place.

Three propellers are available for specific applications for the V-75. They are a standard size for normal use, a high speed model and a heavy duty model.

New Waterproof, Floating First Aid Kit

In a new plastic container, Marine First Aid Kit has been introduced, recently, by Forest City Products, Inc., Cleveland 15, Ohio. Firmly sealed in plastic, the container makes the kit waterproof, rust proof and mildewproof. It will float when dropped in water.

Contents provide complete surgical handling for minor injuries. It includes adhesive bandages, plastic strips, Unguentine, merthiolate, absorbent cotton, complete first aid instructions, etc. The kit is offered in two sizes, small and large.

New Amercoat Zinc Coating

Savings up to 50 percent in application time are predicted for a new inorganic zinc coating by the manufacturers, Amercoat Corp., 4809 Firestone Blvd., South Gate, California. They say the new product cures itself to full hardness without the need of applying a separate curing solution.

Called Zinkote, it is applied over bare steel by brush, spray, or roller. A single coat a few mils thick should give complete protection to steel surfaces exposed to water, severe weathering, salt spray, and abrasion.

The coating sets hard and water resistant in a few hours, and achieves maximum water resistance in several days. Being inorganic it is not effected by organic solvents and not subject to common types of failure.

The product contains no volatile or flammable materials and may be safely used for interior, poorly ventilated areas. It is nontoxic and will not contaminate water or food products.

New West Chester Caulking Compound

The West Chester Chemical Co., Box 39, West Chester, Pa., has developed a new caulking compound based on DuPont Hypalon. Known as Maintz Caulking Compound, it may be applied with gun or knife. It cures into a resilient, rubberlike material. It claims excellent adhesion, weatherability, and resilience. Featured is Maintz' one-part curing system, so that it may be used directly from the container without further mixing. The compound is available in a wide variety of colors including white. Standard containers are one and five gallon pails.

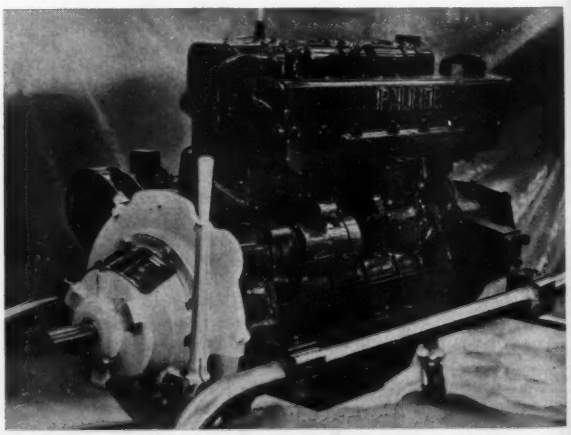
New Marine Products Pump Bulletin

Bronze and iron centrifugal pumps with capacities up to 320 GPM and pressures to 40 psi are described in new Bulletin No. 1004 issued by Marine Products Comany, 598 Lycaste Avenue, Detroit 14, Michigan. The new 6 page bulletin offers nontechnical descriptions of the pumps' design features. Also included are qualifications for high efficiency in operation, as well as cutaway views of the pumps. Performance data on clockwise, counter clockwise, and reversible pumps are included along with specifications and prices.

Northill Appoints Florida Representative

The appointment of F. Morris Love as Northill Anchor manufacturer's representative in Florida has been announced by the Garrett Corporation's Air Cruisers Division, Belmar, New Jersey. Love's headquarters are in Tampa.

Developed more than two decades ago for seaplanes, Northill Anchors are lightweight for easy handling by commercial fishermen. One basic design is incorporated in seven different sizes. The largest is capable of holding boats up to 80 feet in length.



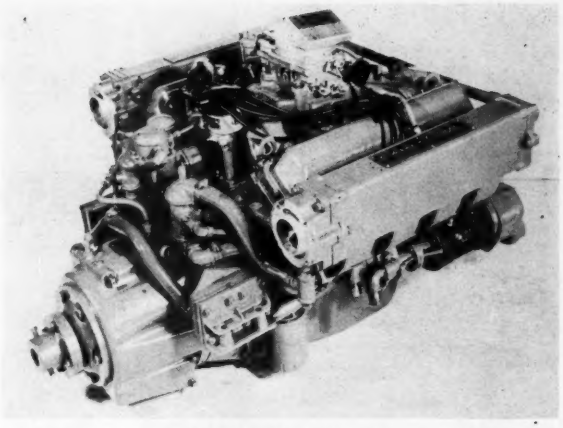
The P.T.O. Clutch unit made by the Palmer Engine Co., designed for power take off on Palmer engine models IH-240 and IH-264. It has 27 hp. capacity at the staft.

Chris-Craft Unveils New V8 Engine

A new V8 marine engine was recently unveiled at the Chris-Craft Marine Engine Research, Development and Test Center in Algonac, Mich. Designated as Model 430, the new engine delivers 275 hp. at 4000 rpm. with non-premium fuels. It has a compression ratio of 8:1 with a 4.30-inch bore and 3.70-inch stroke.

The new model is offered with direct drive, opposite rotation or reduction gears of 2.50:1. Hydraulic clutch is standard equipment. The weight of the new engine is 994 pounds, dry.

Reports say the compact design of the new Model 430 makes it adapatable for installation in a variety of larger utilities, single or twin screw. Full length water jackets and pre-tem[illegible]ring of engine coolant are to provide operating temperatures for sustained high speed operation.



New V8 marine engine Model 430 by Chris-Craft Corp., delivers 275 hp. at 4000 rpm. and weighs 994 pounds.

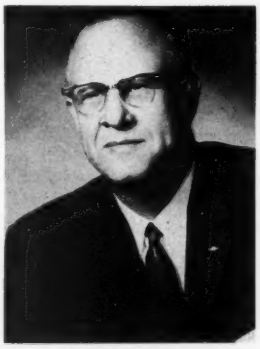
Paxton Installs Crowell Steering

The installation of the Crowell hydraulic steering equipment in the purse boats of the menhaden fleet, described in the August issue of National Fisherman, were a direct result of the work of Robert C. Hutson of The Paxton Company, Norfolk, Va.

The new equipment, which provides more convenient, and efficient amidship steering control, is manufactured by Crowell Designs, Inc., Point Pleasant, N. J. Crowell dealers, in addition to Paxton, are Francis E. Gray, Jr., Dedham, Mass.; A. L. Benenson, West Palm Beach, Fla.; Howard Canterbury, Houston, Tex.; Donald McChesney, Winslow, Wash.; and Paul W. Hiller, Wilmington, Cal.

Fish Net & Twine Representative On West Coast Announced

Fish Net & Twine Co., 933 First St., Menominee, Mich., manufacturers of Sea King Netting, Twines and Accessories, has announced the appointment of Otto S. Meltzer as West Coast representative. Meltzer has been representing lines in the fishing gear field for the past ten years and is well known to commercial fishermen and dealers from Vancouver to San Diego.



Otto S. Meltzer

For some time he was affiliated with a large netting manufacturer as general manager. In that capacity Meltzer came in close contact with all operations in the production of twines and netting. Appointing Meltzer to represent Fish Net & Twine on the West Coast is another step in a new expansion program being put into effect. The firm is in the process of increasing manufacturing facilities and new product developments.

Exide Has Booklet On Storage Batteries

The Exide Automotive Division, of The Electric Storage Battery Co., P. O. Box SM 6266, Cleveland 1, Ohio, is offering a booklet entitled, "Facts about Storage Batteries". Sections include battery tests, rating systems, quality range, construction, battery chemistry, etc.

RCA Announces New Dealerships and Representatives

Dealership appointments for RCA Radiomarine products have been announced for California, South Carolina, Florida, and Massachusetts. The new dealers are: Larry Lynde Electronics, 1526 East Fourth St., Long Beach, Cal.; E. C. Stalvey, Jr., "Stalvey's", 909 Front St., Georgetown, S. C.; Superior Marine Radio, 136 St. George St., St. Augustine, Fla.; Tampa Marine Electronics, 4610 East Broadway, Tampa, Fla.; and Tracy Yacht Basin, Inc., 20 Ericsson St., Dorchester, Mass.

Five additional regional sales representatives have been named by RCA in connection with an expanded small craft sales program. Don E. Christiansen, formerly with RCA Radiomarine in Camden, N. J., will function in Greater New York City and New England areas. D. S. Chios will handle equipment sales on the West Coast with headquarters in Los Angeles, Cal. Chester E. Croft has been assigned to the New Orleans territory. He was associated with Radiomarine's service facility in Tampa, Fla. Fred C. Gusler, will cover the middle Atlantic states with headquarters in Camden, N. J. Elmer C. Mason has been appointed as representative for the southeastern area, with headquarters in Miami, Fla.

Radiomarine products dealers have been appointed by the Radio Corporation of America at Sea Bright, N. J., and Fort Lauderdale, Fla., according to an announcement by the Small Craft Equipment Sales. Shore Communications Co. of Sea Bright operates principally in Monmouth, Essex, and Union Counties of N. J. The Florida dealer named is Charles Cooper, 713 East Las Olas Boulevard, Fort Lauderdale.

William O. Johnson, Marine Electric Co., 2130 Newton Avenue, San Diego, Cal., has been appointed as dealer for RCA.

Edson Announces Representative

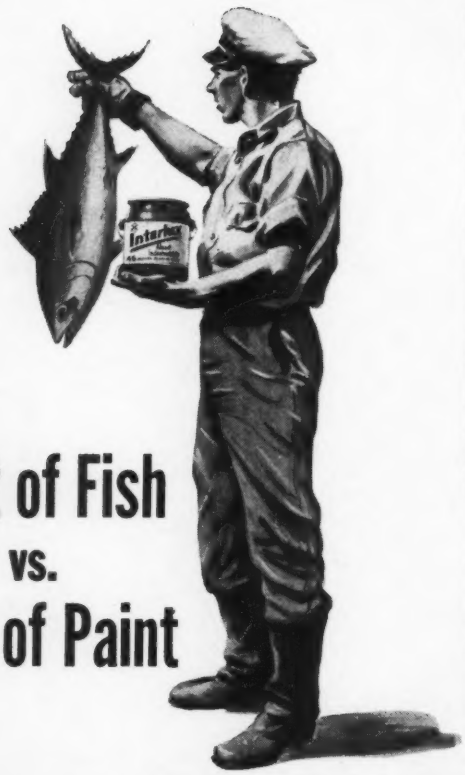
The Edson Corporation, 334 South Water St., New Bedford, Mass., has announced the appointment of Hathaway, Reiser and Raymond as sales representatives for the New England area, from Essex, Conn., to City Island, N. Y. Peter H. W. Davidson will call regularly on marine dealers and boatyards in the area to assist in selection of steering system components.

The Edson Corp.'s line of marine steering systems, as well as the Lever Action bilge pump, will be on display at the Hathaway, Reiser, and Raymond showroom at 184 Selleck St., Stamford, Conn.

Floats by Arkon Products, Inc.

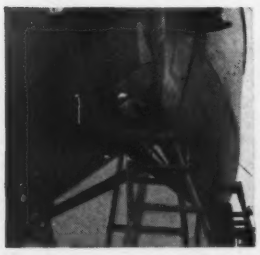
The name of Arkon Products, Inc. 95 Prince St., Paterson, New Jersey, which has taken over the Arkon Plastic Division of The Linen Thread Co., Inc., was incorrectly spelled in the September issue of National Fisherman. The correct spelling is Arkon Products, Inc.

Arkon will handle the foreign and domestic sales of all products except Ark floats, which will be distributed in the U. S. by The Linen Thread Co. only.



Cost of Fish
vs.
Cost of Paint

Just consider what the antifouling properties of a good bottom paint can do for you. A clean hull drives easily. A foul hull can use up to 10% more fuel. A clean hull gets you where the fish are, quicker, and gives you more time for fishing. Now consider the lasting qualities of the bottom paint. Longer time between haul-outs, lower cost for painting per year and more worktime for your vessel. This all adds up to the reason why you should use "SUPER-TROP" Antifouling Bottom Paint made by International Paint Company, Inc., specialists for over 70 years in the making of Marine Paints. Send for free descriptive folder.



FOR METAL BOTTOMS
INTERNATIONAL has developed a combination of a primer and an antifouling paint that offers the maximum protection and preservation of metal bottoms. Send for the two circulars, "SILVER PRIMOCON" and "SUPER-TROP"

International
BOTTOM PAINTS

International Paint Company, Inc.

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628 Pleasant St., New Orleans 15, La.
96 Dunlawton Blvd., Daytona Beach, Fla.

WORLD'S LARGEST MARINE PAINT MAKERS

New England Tuna Boat

(*Continued from page 11*)

was one of the first of its type to be converted to tuna purse-seining. The vessel normally operates in the trawl fishery for industrial fish out of Provincetown, Mass.

Simple Modifications Made

During the 1958 tuna purse-seining operations, the crew consisted of 8 men, of which 2 were experienced West Coast tuna-seiner captains. The principle modifications of the vessel were simple, and consisted of removal of the aft gallows and the installation of an extended boom for strapping the net aboard. A purse-seine turn-table was not installed, and the existing double-drum trawl winch was used as a purse winch during net-pursing operations.

The tuna purse seine was modified from standard Pacific Coast measurements to a net 310 fathoms long by 25 fathoms deep. The body of the net was constructed of linen and cotton webbing, 4¼-inch stretched mesh, 100 meshes per strip. The cork-line strip was 8 meshes deep, and the leadline strip was 50 meshes deep, 8-inch stretched mesh.

This year the *Silver Mink* was equipped with a Starr Nylon purse seine, made with 42-thread seine twine.

A large, flat-bottomed, seine-skiff, 26 feet by 15 feet, and powered by a 106-horsepower gasoline engine, was used in the seining operations. Both the purse seine and seine skiff were loaned to the *Silver Mink* for this project by the U.S. Bureau of Commercial Fisheries.

Tuna production fishing began August, 1958. The vessel had conducted three weeks of intermittent scouting prior to this time and had made two sets yielding 2½ tons of large bluefin ranging in size from 200 to 400 pounds each. Fishing continued through October 4, 1958, at which time the *Silver Mink* was reconverted to otter-trawling for the winter season. The vessel did not carry refrigeration or ice, and the majority of trips were on a daily basis, operating from the vessel's home port, Provincetown, Mass.

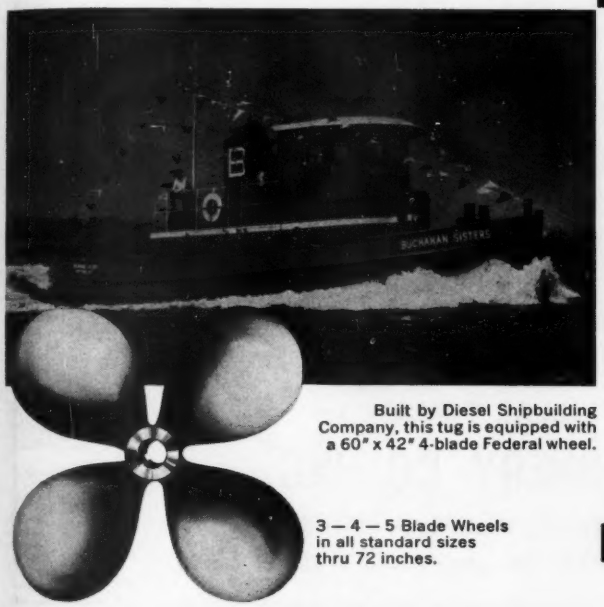
It was estimated that unsuccessful sets were made on approximately 162 tons of tuna during the entire period for one or more of the following reasons: fish under bottom of net, seine line hang-up, net ripped in mud, fish wild, ripped bag due to load, and seine snarled while setting.

When attempting to evaluate the future prospects of this type of fishing in the New England area, a number of factors must be taken into consideration. During the 1958 season, schooling bluefin tuna appeared late in August—approximately one month later than normal. This tendency for a later season was the characteristic pattern of other surface-schooling species of fish in the area. Fishermen familiar with the area reported that the abundance of schooling tuna was below that normally expected. The size of most tuna caught during the 1958 season ranged from about 60 to 80 pounds per fish. Records indicate that adverse weather conditions such as wind, storm fronts, etc., in New England were more numerous than usual. This reduced the periods when purse-seining could be done successfully. Man-controlled factors which tended to reduce operating efficiency were the aged condition of the net, which required excessive periods of repair, and a crew most of whom were inexperienced in purse-seine fishing for bluefin tuna.

Industry estimates indicate that the 1958 tuna season could have yielded at least 250 tons with adequate gear, training, and assistance by aerial spotting. The extent of the commercial bluefin tuna resource, both inshore and offshore, available to the New England fishing industry is yet to be thoroughly evaluated. However, a fishery contributing substantially to the New England area can be developed with the proper fishing methods. This has been demonstrated in previous years by other vessels and is again emphasized by the record production of the *Silver Mink*.

On tugs, fishboats, commercial craft of all kinds...

it PAYS to use FEDERAL PROPELLERS



Built by Diesel Shipbuilding Company, this tug is equipped with a 60" x 42" 4-blade Federal wheel.

3 — 4 — 5 Blade Wheels in all standard sizes thru 72 inches.

These wheels are universally recognized as providing the finest, most economical performance, but that is only half the story. They're cast of pure, virgin metals (not one bit of scrap is used) in an alloy that makes them last as much as three times as long as wheels of ordinary bronze. When next you buy a propeller, either for a new boat or replacement, be sure it's a FEDERAL. It pays!

For an expert, FREE propeller recommendation for your craft, see your FEDERAL dealer or write for our propeller analysis form.

FEDERAL PROPELLERS

GRAND RAPIDS 2, MICHIGAN

Plastic Hulls For Fishing

(*Continued from page 10*)

flange. The diaphragms are bonded into the skeg and then the transverse frames are carried across the top flanges of the diphragms with the result that the diaphragms become part of the frames.

Built in Fuel Tanks and Engine Mounting

In the larger vessels it is now usual to fit polyester mat fuel tanks and sometimes water tanks. Diesel fuel tanks can be built into engine compartments in such a manner as to serve as foundations for the engine girder.

For smaller craft, or when built-in fuel tanks are not required, it has been found that the most convenient form of engine foundation consists of a pair of ¾ inch marine plywood planks on edge, running fore and aft. The bottom edge is bonded to the skin of the hull. Appropriate transverse members and anti-tripping brackets can be made either of marine plywood or polyester mat. An angle iron engine girder is through bolted to the top edge of the fore and aft plank to carry the engine.

The great advantage of these arrangements, i.e. the engine secured to fuel tanks or to plywood foundations is that no bolts pass through the hull below the water line and the engine load is transferred to the hull over a very wide area which helps to reduce vibration.

Fitting Decks on Plastic Hulls

It is easy to fit a timber deck to a polyester mat hull. An outwale and an inwale are attached to the hull by through fastening in the conventional manner. Deck beams are fitted to the inwale in a conventional manner and planked. When wooden decks are required the top-hat frames are plugged with wood in the way of knuckle, so that the fastenings may be taken through the frames.

For small boats it is easy to make a deck as a separate molding with a vertical flange all around at the sheer-line designed to mate up with the vertical knuckle of the hull. Frames are carried across the deck so as to match up with the transverse frames of the hull. After the deck has been dropped into place a timber outwale is fitted and secured to the hull by bolts which pass through the outwale, through the vertical deck flange, and through the knuckle of the hull.

The joint between the knuckle and the underside of the deck is covered with a layer of polyester/mat so as to make it waterproof. The deck frames and transverse frames of the hull are then joined by hollow knees. Thus the finished frames are continuous and are homogeneous with both deck and the hull, which give great strength to the whole structure.

There is an alternative system which is more suitable for lage boats. A 6 in. wide horizontal flange facing inboard at the sheer-line is molded with the hull. This flange is recessed so as to take the thickness of the deck. The deck is made separately and can then be dropped into the recess of the horizontal flange, to which it is both bolted and bonded. Again the deck frames are bonded to the transverse frames with hollow knees.

Marine plywood bulkheads are cheap and convenient. While the hull is still in its mold the plywood bulkheads are cut to shape and bonded into the hull with two layers of polyester/mat applied on each side of the bulkheads at the junction with the hull in such a manner that the bonding extends for 2 in. up both faces of the bulkhead and 2 in. along the skin of the hull. If the bulkheads are installed while the hull is in the mold they can be fitted with great accuracy. Moreover, the bulkheads serve to strengthen the hull and hold it rigid if the hull has to be transferred to some other shop, or delivered to some other yard for fitting out.

Tests show that the joint between a bulkhead and a hull which has been bonded by this method is at least twice as strong as the conventional method of securing bulkheads to wooden hulls.

Power Economy and Low Maintenance

Describes My

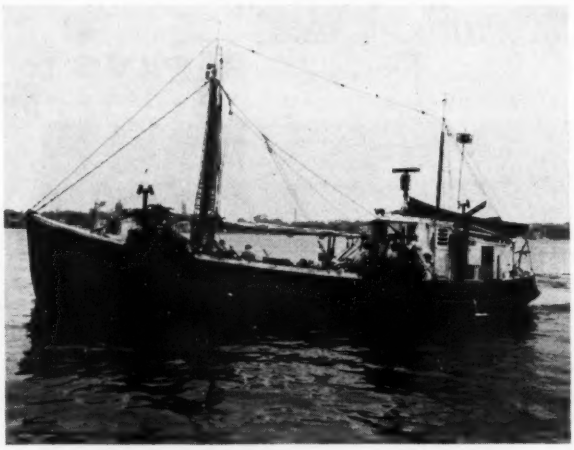
CATERPILLAR D342

MARINE ENGINE

States Capt. John J. McDonald of the Boat ROBERT JOSEPH, out of New Bedford

Economy . . . Dependability . . . Long Life . . . Conservative rating with plenty of reserve power . . . Compactness . . . You get them all in a Cat Diesel Engine. Caterpillar Diesels are turning in unmatched records for performance and endurance.

We have many new engines and new developments you should know about. Call us today.



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Marine Division: 126 Front St., New Bedford, Mass. *Phone:* WYman 6-0011

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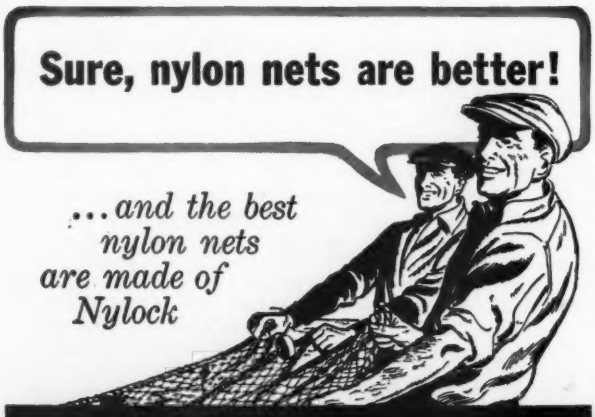
Sure, nylon nets are better!



...and the best nylon nets are made of Nylock

NYLOCK®

THE ORIGINAL BONDED NYLON TWINE

NYLOCK's exclusive U.S. Patented Bonding Process (No. 2590586) gives every net *all* of these advantages:

- Knot slippage practically eliminated!
- Nets last much longer due to greater abrasive resistance!
- Nets stay cleaner and whiter longer!
- Nets have much greater resistance to marine organisms!

HEMINWAY & BARTLETT

THE HEMINWAY & BARTLETT MFG. CO.
500 Fifth Avenue, New York 36

Great Lakes Gillnetting

(*Continued from page 9*)

the dry nets have been set. In port, wet nets are wound on to drying reels, picked of debris, and stretched for drying before repacking.

Methods of hauling the nets on mechanized boats differ little from those on unmechanized craft. The mechanical hauler is the only innovation. The modern hauler is small, takes little space, and can be adapted to any type of hull. It is efficient and needs little maintenance. The drive is from the main engine through a shaft. The haulers are always operated from one side of the boat only, either port or starboard.

Problems Affecting The Industry

The greatest problem for the fishing industry on the Great Lakes has been the lamprey eel. During the war years, the lamprey spread through Lake Huron and throughout the entire length of Lake Michigan. The fight to control the lamprey eel came only after it had nearly destroyed the trout in Lakes Michigan and Huron and had begun to spread into Lake Superior.

The lower Lakes fishermen now concentrate on perch, chub, smelt, whitefish, herring, suckers, some carp, etc. Trout are still caught in Lake Superior. The eradication of the lamprey, or at least its control, and the restocking of trout throughout the Lakes, was begun full scale during the past year. The use of selective chemical poisoning has so far proved successful.

The Lakes fishermen are somewhat concerned that the opening of the St. Lawrence Seaway may encourage migrations of certain species of trash fish. Other problems are: pollution of water by industrial plants; restocking the Lakes with trout and other compatible species; the expected population increase which will utilize the Lakes to their fullest; and educating the population of the Lakes States to eat more fresh-water fish, rather than to import salt-water fish.

BOAT CATCHES

For Month of September

Hailing fares. Figure after name indicates number of trips.

GLOUCESTER (Mass.)

Acme (7)	167,000	Little Flower (8)	291,000
Admiral (3)	162,000		
Agatha (7)	703,000	Magnolia (1)	180,000
Agatha & Patricia (2)	80,000	Malolo (2)	163,000
American Eagle (7)	260,500	Manuel P. Domingoes (2)	310,000
Andrea G. (2)	180,000	Margaret Marie (6)	37,500
Anna Guarino (10)	35,500	Marianna II (7)	282,100
Annie (2)	9,500	Mary Ann (8)	316,500
Anthony & Josephine (9)	259,500	Mary Jane (2)	410,000
Atlantic (3)	163,500	Mary Rose (2)	167,000
Ave Maria (3)	51,000	Morning Star (7)	252,000
		Nancy & Maria (4)	67,000
Blue Waters (1)	55,000	Njorth (1)	2,000
Cape Cod (7)	67,500	Ocean Spray (2)	145,000
Carlo & Vince (8)	279,500	Olympia (8)	529,000
Cigar Joe (5)	144,000	Our Lady of Fatima (1)	170,000
Curlew (2)	305,000	Our Lady of Tears (7)	39,000
Dawn (12)	56,500	Pioneer (5)	52,500
Dolphin (1)	102,000	P. K. Hunt (1)	140,000
Doris F. Amero (7)	490,000	Puritan (1)	63,000
Eagle (2)	359,000	Rhode Island (8)	387,000
Eddie & Lulu M. (3)	16,000	Rosalie S. (1)	25,000
Edith L. Boudreau (3)	226,500	Rose & Lucy (6)	228,500
Emily H. Brown (2)	335,000		
Estrela (2)	370,000	St. Anna Maria (5)	144,500
Eva II (11)	43,500	St. John (4)	8,500
Evelyn L. Brown (2)	425,000	St. Mary (9)	336,500
		St. Nicholas (1)	180,000
Falcon (6)	144,500	St. Peter (8)	352,500
Famiglia (3)	100,000	St. Peter III (8)	326,500
Flow (1)	250,000	St. Providenza (10)	57,000
Frances R. (7)	247,000	St. Rosalie (1)	24,000
		St. Stephen (1)	1,500
Gaetano S. (2)	150,000	St. Teresa (7)	298,000
Giacoma (1)	2,000	St. Victoria (8)	800,500
Gloucester (1)	190,000	Salvatore & Grace (7)	254,500
Golden Dawn (8)	50,500	Sandra & Jean (7)	300,500
Golden Eagle (2)	250,000	Santa Lucia (5)	22,500
		Santa Maria (1)	80,000
Holy Family (3)	500,000	Sea Queen (2)	22,000
Holy Name (7)	233,000	Sebastiana C. (7)	346,500
		Serafina N. (1)	35,500
Immaculate Conception (5)		Serafina II (9)	244,500
	273,500	Sol Fass (2)	320,000
		Sunlight (2)	360,000
Jackie B. (3)	158,000		
J.B.N. (1)	25,000	Theresa M. Boudreau (2)	400,000
Jennie & Lucia (4)	151,500	Tipsy Parson (3)	7,000
Joseph S. Mattos (2)	360,000		
Judith Lee Rose (2)	490,000	Villanova (2)	435,000
		Vincie N. (8)	436,000
Lady of Good Voyage (3)	182,000	Virginia Ann (9)	185,000
Lady of the Rosary (3)	59,000		
Linda B. (6)	41,000	Wild Duck (2)	295,000

SEATTLE (Halibut Fleet Fishery)

Addington (2)	42,900	Lloyd (1)	11,200
Agnes O. (1)	24,200	Lucky Star (1)	40,000
Akutan (1)	42,000	Maddock (1)	14,000
Alrita (1)	55,000	Marconia (1)	108,000
Angeles (1)	15,500	Mermaid (2)	46,200
Arlice (1)	35,500	Nanna (2)	48,500
Atlantic (1)	26,000	New Era (1)	30,000
Bergen (2)	56,500	Norrona (2)	37,000
California (1)	25,500	Northern (1)	32,000
Chelsea (1)	33,000	Orbit (1)	11,000
Constitution (1)	44,000	Pacific Wave (1)	70,000
Daily (1)	28,000	Presho (1)	15,000
Eclipse (1)	45,000	Recruit (1)	40,000
Ethel S. (2)	66,500	Salute (1)	31,500
Eureka (1)	16,000	Sanak (1)	50,000
Freya (1)	22,000	Sandra L. (1)	21,000
Grant (1)	26,000	Sea Bird (2)	45,700
Inez M. (2)	58,700	Seafarer (1)	20,000
Jane (1)	23,700	Sharon Patricia (1)	6,000
J.B. (2)	56,700	Swift II (2)	25,000
Kingfisher (1)	30,000	Sylvia (1)	27,500
Leviathan (1)	19,500	Vigorous (1)	28,000

NEW YORK

North Cape (1) 41,500

Scallop Landings (Lbs.)

Beatrice & Ida (2)	22,000	Karina T. (2)	22,000
Carol-Jack (3)	33,000	Norseman (2)	22,000
David A. (2)	19,000	Phyllis J. (3)	33,000
Enterprise (3)	33,000	Sonya (1)	7,500
Felicia (2)	22,000		

"Thousands of miles of dependable navigation" with a **Ritchie Compass**

"With it our course is true" says Capt. Christiano Aiello, of the Laura A, out of New Bedford.

Equipped with a Ritchie Model 54 Float Type Compass (with 7" card) "Laura A" is one of countless fully-found fishing vessels which rely upon the Ritchie Compass accuracy and dependability which dates back over a hundred years. One such typical compass (Laura A's) is illustrated here. There is an ideal Ritchie Compass for your boat, regardless of her size or type. See your marine dealer. If he cannot supply you, write us for catalog.

"Guiding Fully Found Craft Since 1850"

E. S. **RITCHIE** & SONS, Inc.
Pembroke, Mass.

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CHESAPEAKE BAY and ATLANTIC OCEAN FRESH CAUGHT FISH

all size shipments---rough, dressed, filleted

ocean and bay seasonal varieties

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Have you ever observed how many experienced fishermen continue to "stick loyally to Mustad Key Brand Fish Hooks"? There's a reason why. A trial will very definitely convince you. Make it at your earliest convenience—and learn something to your advantage.

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Soft rubber, water lubricated, Cutless bearings give years of trouble-free service on fishing vessels. Resist heat, oil, and wear. Quiet and protect shafts too. There is a size and type to fit your boat.

Available at Boat Repair Yards and Marine Equipment Dealers.

Lucian Q. Moffitt, Inc.
AKRON 8, OHIO
Engineers and National Distributors

NEW BEDFORD (Mass.)

Admirals Pride (1)	14,000	Lorine III (2)	40,500
Adventurer (3)	103,900	Louis A. Thebaud (3)	94,300
Agda W. (3)	50,000		
Aggie & Irene (1)	16,000	Major J. Casey (3)	70,000
Althea (3)	63,500	Malvina B. (2)	34,000
Anastasia E. (1)	32,000	Marie & Katherine (3)	81,500
Annie Louise (3)	44,100	Martha E. Murley (3)	83,000
Annie M. Jackson (3)	69,000	Mary E. D'Eon (2)	18,600
Austin W. (2)	28,500	Mary J. Landry (3)	88,500
		Mary Tapper (4)	146,000
Barbara M. (3)	69,000	Midway (4)	162,500
		Miriam A. (3)	79,500
Cap'n Bill II (3)	98,300	Molly & Jane (3)	105,500
Carl Henry (3)	113,000		
Catherine & Mary (3)	74,300	Nancy L. (1)	24,000
Capt. Deebold (3)	72,700	North Cape (1)	23,000
Charles E. Beckman (3)	75,800	North Sea (3)	85,000
Christina J. (3)	93,600		
Comber (3)	27,200	Pauline H. (3)	216,800
Connie F. (3)	37,900	Phyllis J. (4)	81,500
Eugene H. (2)	77,500	Roann (1)	24,000
Evelina M. Goulart (2)	82,000	Robert Joseph (3)	89,100
		Roberta Anne (4)	130,700
Falcon (3)	82,000	Rush (3)	133,800
Friendship (3)	61,000		
		Sea Gold (3)	48,500
Gannet (2)	96,800	Sea Rambler (2)	51,000
Glen & Maria (1)	26,000	Shannon (1)	22,500
Growler (3)	106,800	Sharon Louise (4)	138,200
		Smilyn (3)	84,500
Harmony (3)	66,600	Solveig J. (3)	129,000
Hope II (3)	63,100	Sunbeam (2)	46,000
		Susie O. Carver (3)	59,700
Invader (3)	110,000		
Ivanhoe (3)	45,500	Teresa & Jean (3)	125,800
		Two Brothers (4)	31,800
Janet & Jean (3)	66,300		
Joan & Tom (1)	22,500	Valiant Lady (3)	69,400
Joan & Ursula (3)	94,000	Venture I (3)	88,400
John G. Murley (2)	102,000	Viking (3)	123,000
Julia DaCruz (2)	57,500		
		Whaler (2)	92,300
Laura A. II (3)	125,000	Winifred M. (2)	7,700
Libby (3)	121,300		

Scallop Landings (Lbs.)

Abram H. (1)	12,200	Lillian B. (3)	36,400
Aloha (3)	34,900	Linus S. Eldridge (2)	22,400
Alpar (2)	25,700	Little Infant (1)	4,000
Amelia (3)	35,600	Louise (2)	24,400
		Lubenray (2)	28,600
Babe Sears (2)	22,400		
Baltic (3)	33,600	Malene & Marie (3)	33,200
Barbara (2)	12,000	Mary Ann (2)	22,400
Barbara & Gail (3)	34,300	Mary J. Hayes (2)	24,600
B. Estelle Burke (2)	23,700	Moonlight (2)	22,900
Bobby & Harvey (3)	34,000		
Brant (3)	33,600	Nancy Jane (3)	33,600
		Neptune (3)	34,600
Camden (2)	22,400	New Bedford (4)	40,800
Carol & Estelle (2)	22,400	Newfoundland (3)	34,400
Catherine B. (2)	23,200	Noreen (3)	38,200
Catherine C. (3)	34,400		
Charles S. Ashley (3)	34,000	Pearl Harbor (2)	22,900
Clipper (3)	33,600	Pelican (3)	37,200
		Polaris (2)	23,000
Dartmouth (2)	24,400	Porpoise (3)	28,300
Debbie Jo-Ann (3)	36,600		
		Richard Lance (2)	22,400
Edgartown (4)	42,400	Ruth Lea (3)	33,600
Eleanor & Elsie (2)	23,200	Ruth Moses (2)	27,200
Elizabeth N. (2)	22,400		
		Sandra Jane (2)	24,400
Fairhaven (4)	41,500	Sandra & Jean (1)	12,200
Falcon (1)	4,000	Sea Ranger (2)	22,400
Flamingo (2)	23,800	Sippican (3)	36,600
Fleetwing (3)	35,400	Snoopy (3)	30,600
Florence & Lee (3)	36,300	Stanley M. Fisher (3)	33,600
Florence B. (3)	30,400	Stephen R. (2)	23,600
Geraldine (3)	31,800	Toscin (3)	33,600
Hilda Garston (3)	37,400	Ursula M. Norton (3)	45,200
		Villa-Riall (3)	33,600
Jerry & Jimmy (3)	34,200		
Josephine & Mary (2)	22,400	Vivian Fay (5)	54,800
Kingfisher (2)	22,400	Wamsutta (3)	25,400
Laura A. (3)	41,200	Whaling City (2)	20,900
Lauren Fay (2)	25,200		

Swordfish Landings (No. of Fish)

Bozo (1)	6

ROCKLAND (Me.)

Araho (3)	306,000	Louise G. (5)	91,000
Brighton (2)	320,000	Mabel Susan (5)	130,800
Elin B. (4)	197,000	Margaret Jean (5)	50,700
Ethel B. (3)	30,900	Myrt II (3)	28,300
Flo (3)	99,800	Ocean (2)	540,000
Helen Mae II (3)	159,500	Squall (1)	285,000
Jackie B. (2)	22,200	Storm (1)	300,000
John J. Nagle (2)	224,000	Surf (2)	600,000
Lilo (2)	26,000	Tide (2)	590,000
Little Grower (4)	297,000	Wave (2)	520,000

Scallop Landings (Lbs.)

Pocahontas (2)	22,000

BOSTON (Mass.)

Agatha & Patricia (2)	93,700	M. C. Ballard (2)	95,800
Alphonso (1)	9,000	Medan (3)	132,600
Arlington (3)	246,800	Michigan (3)	381,900
Atlantic (2)	176,400	Minnie (2)	241,100
		Mother Frances (4)	186,900
Baby Rose (2)	159,200		
Bonnie (2)	248,500	Nautilus (3)	114,000
Buzz & Billy (4)	134,400	Nellie P. (2)	15,500
		New Star (3)	327,800
Cambridge (2)	181,400	Notre Dame (5)	237,800
Caracara (3)	143,300		
Carmela Maria (3)	25,700	Ohio (3)	178,600
Carmen & Vince (5)	252,100	Olympia La Rosa (5)	170,100
Charlotte G. (1)	22,000		
Clipper (3)	116,200	Pam Ann (3)	185,900
Columbia (3)	136,100	Patty Jean (2)	222,000
Comet (3)	214,400	Phantom (3)	349,200
		Philip & Grace (3)	213,100
Dolphin (1)	31,100	Plymouth (2)	121,200
		Princess (4)	25,400
Eagle (1)	80,200		
Ethelena (5)	218,000	Racer (2)	218,500
		Red Jacket (3)	273,900
Flying Cloud (3)	416,100	Regina Maria (2)	92,200
Four (2)	118,900	Rosa B. (1)	81,000
Gaetano S. (1)	48,000	Rosie (5)	83,200
Geraldine & Phyllis (3)	124,100	St. Angelo (3)	77,800
Grace & Salvatore (3)	198,700	St. Marco (2)	56,600
		St. Nicholas (1)	39,300
Heroic (3)	212,700	St. Rosalie (3)	114,000
		Salvatore (3)	6,800
Jane B. (3)	129,800	San Calogero (1)	8,100
J. J. Junior (3)	216,000	Sea Queen (2)	83,800
J.B.N. (1)	46,200	Star of the Sea (2)	31,200
Jeanne D'Arc (4)	125,600	Swallow (1)	38,700
Joseph & Lucia (3)	203,700		
Josephine P. II (3)	112,000	Terra Nova (2)	154,000
		Texas (2)	96,500
Katie D. (1)	34,500	Thomas D. (5)	200,800
		Thomas Whalen (3)	218,700
Lady of the Rosary (2)	63,300		
Leonard & Nancy (2)	54,300	Villanova (5)	207,800
Leonarda (1)	7,000		
		Weymouth (2)	138,600
Magellan (4)	123,200	Wm. J. O'Brien (3)	311,800
Manuel F. Roderick (4)	158,900	Winchester (3)	292,600
Marie Del S. (3)	13,000	Wisconsin (3)	325,700
Mary & Joan (1)	74,500		
Mary Rose (1)	55,800	Yankee (2)	12,700

Swordfish Landings (No. of Fish)

Tina B. (1)	73

WOODS HOLE (Mass.)

Admirals Pride (1)	2,700	Intrepid (3)	6,200
Angeline (1)	600	Joan & Ursula (1)	3,200
Angie & Irene (1)	21,900		
Arnold (6)	27,000	Little Jeff (5)	7,700
Bernice (2)	6,800	Madeline (3)	3,200
		Margie O. (1)	900
Cap'n Bill (1)	34,800	Minkette I (1)	2,400
Cap'n Bill III (2)	44,300	Morning Star (5)	7,900
Clifton (4)	7,000		
Curlew (5)	26,500	Priscilla (1)	1,000
		Reliance (3)	4,800
Dauntless (2)	11,800	Ruth Nancy (1)	4,600
Driftwood (2)	1,700	Shannon (1)	10,800
		Trina Lea (1)	3,500
Ellena (3)	4,300		
Frankie & Jeanne (3)	6,700	Viking (4)	9,400
Gertrude D. (1)	1,700		

Swordfish Landings (Lbs.)

Aloysius (1)	300	Ingrid (1)	400
Amphrodite (1)	400	Kelbarsam (1)	4,400
		Papoose (1)	9,700
Bridget Ann (1)	700	Southern Cross (2)	8,900
Elsa C. (1)	4,300	Three Bells (1)	9,300
Gail K. (1)	800		
Gertrude D. (1)	4,900	Valerie M. (1)	400
Hy-Gin (1)	300		

PORTLAND (Me.)

Alice M. Doughty II (3)	103,000	Lawson (3)	210,000
Alton A. (1)	10,000		
Andarte (2)	173,000	Marie H. (1)	200
Ariel (6)	8,300	Mary & Helen (8)	14,400
Bobby & Jack (3)	230,000	Mascot (6)	7,700
Challenger (2)	1,100	Quincy (1)	170,000
Courier (3)	360,000	Resolute (2)	86,000
Dorchester (1)	175,000	St. George (1)	185,000
Dorothy & Ethel (1)	30,000	Sea Hawk (2)	253,000
Dorothy & Ethel II (2)	42,000	Theresa R. (4)	347,500
Elinor & Jean (3)	90,600	Vandal (4)	243,000
Gloucester (1)	200,000	Voyager (4)	206,500
Gulf Stream (2)	370,000	Wawenock (2)	460,000

Scallop Landings (Lbs.)

Fransic L. MacPherson (1)	11,000	Sylvester F. Whalen	41,000

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Chas. Pfizer & Co., Inc., 630 Flushing Ave., Brooklyn 6, N. Y.

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Exide Industrial Division—The Electric Storage Battery Co., P. O. Box 8109, Rising Sun & Adams Aves., Philadelphia 20, Pa.
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Columbian Rope Co., Auburn, N. Y.
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Edo Corporation, College Point, L. I., N. Y.
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Hubbs Engine Co., 1168 Commonwealth Ave., Boston 34, Mass.
Lister-Blackstone, Inc., 42-32 21st St., Long Island City 1, N. Y.
H. O. Penn Machinery Co., Inc., East River and 140th St., New York, N. Y.
Perkins Machinery Co. Inc., Exit 53 Route 128, Needham Hts., Mass.; 4 Water St., Fairhaven, Mass.
Petter Engine Div., Orenda Industrial, Inc., 34-14 58th St., Woodside 77, N. Y.
Red Wing Marine Corp., Red Wing, Minn.
Waukesha Motor Co., Waukesha, Wisc.
White Diesel Engine Division, White Motor Co., Springfield, Ohio.

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Burmeister & Wain American Corp., Lathrop Engine Div., Mystic, Conn.
Marine Engine Division, Chrysler Corp., 12200 E. Jefferson Ave., Detroit 15, Mich.
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Gray Marine Motor Co., 646 Canton Ave., Detroit, Mich.
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Western Trawl & Supply Co., Freeport, Texas.

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John A. Roebling's Sons Corp., Trenton 2, N. J.
Wickwire Spencer Steel Division of The Colorado Fuel & Iron Corp., Palmer, Mass.

FOREIGN BAILINGS

CANADIAN LANDINGS of seafoods in August—126.4 million pounds valued at $5.4 million—were well above those of July and exceeded those of the months of August for a number of years.

At the end of the month the total quantity of fish landed this year was greater than that landed during the corresponding period of either 1957 or 1958.

RUSSIAN FISHERIES show tremendous growth according to Dr. D. B. Finn, director of the Fisheries Division of the U.N. Food and Agricultural Organization. Finn reports that the Russian catch has increased more than a million tons since 1938 and now exceeds 2½ million tons.

Finn further states that during the same period the number of fishing boats has risen to 60,433. The most significant increase is in powered craft, from 2,727 to 12,387. Of this increase the most important in size and power are trawlers which climbed from 107 to 1,785.

MEXICO CITY SHRIMPERS say the catch is falling off in the Gulf of Mexico, but that country is exporting more shrimp than a year ago.

The Confederation of Industrial Chambers reports 13,467 tons were sold abroad in the January-June period of this year compared to a total of 10,479 during the same time last year.

NEWFOUNDLAND HAS SET itself a production record for frozen fish with an output of 15.3 million pounds in July against 10.5 million pounds one year ago. Value of the catch to fishermen was $3 million.

A NEW GERMAN RESEARCH institute for fishery economics and fishery policies has been registered in Bremen. Its head is Dr. Wilhelm Blanke who is also head of the State's research office for fisheries of the Commission for Economic Research in Bremen.

The new institute has been formed to investigate fishery economic and fishery policy problems on a scientific basis. It is the first of its kind in Western or Eastern Europe.

As a more flexible organization than the research office, it will supplement the latter's work.

RUSSIANS BLAME Japanese for their drop in the salmon take this year, in reporting that the number of salmon entering the rivers on the west coast of Kamchatka Peninsula, have decreased over the past several years.

Kamchatka scientists believe the decrease is due to the intensive fishing carried out by the Japanese fishermen on the high seas.

CANADIAN TESTS on the effect of colored gill nets have shown unusual results. During a single season, pale blue nets were set among several ordinary whitefish gill nets and consistently caught between 20 and 50 percent more fish.

Fishermen have tried dark green nets and a few have tried red ones. In each case they say they have netted more fish.

THE PORTUGUESE FISHING fleet off the Grand Banks has received its first all-aluminum craft. It is the 600-ton *Lausado*, put into operation this summer.

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Wesco Cod-end Protectors
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1 Cummins, model LM, 275 hp. with 2-1 reverse and reduction gear.
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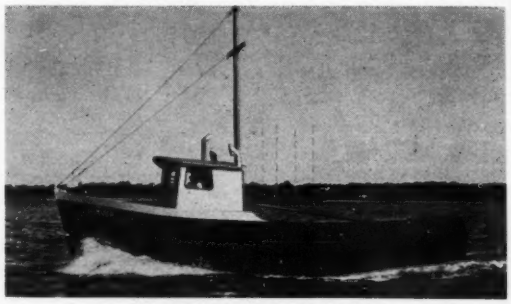

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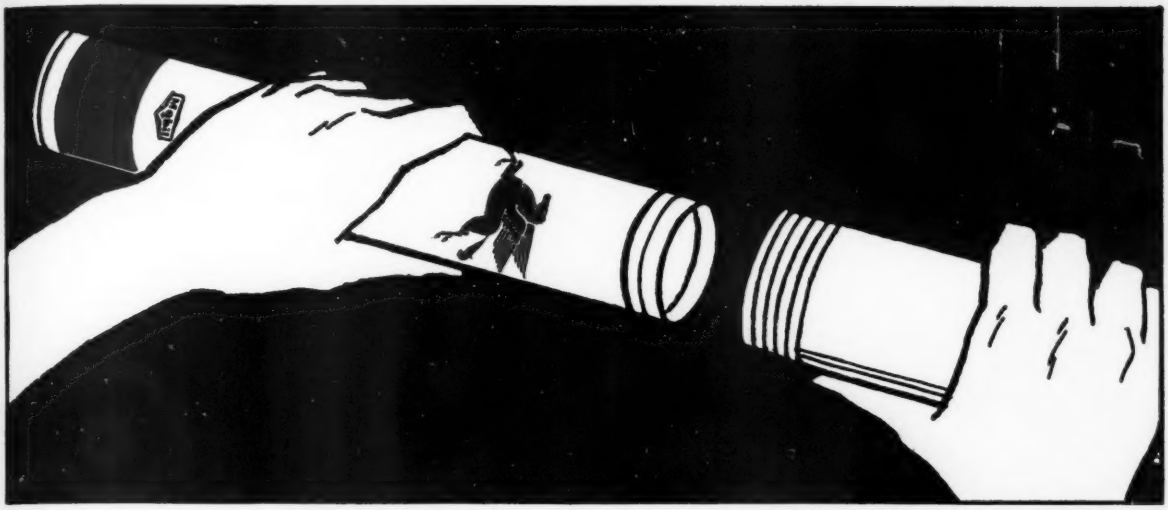

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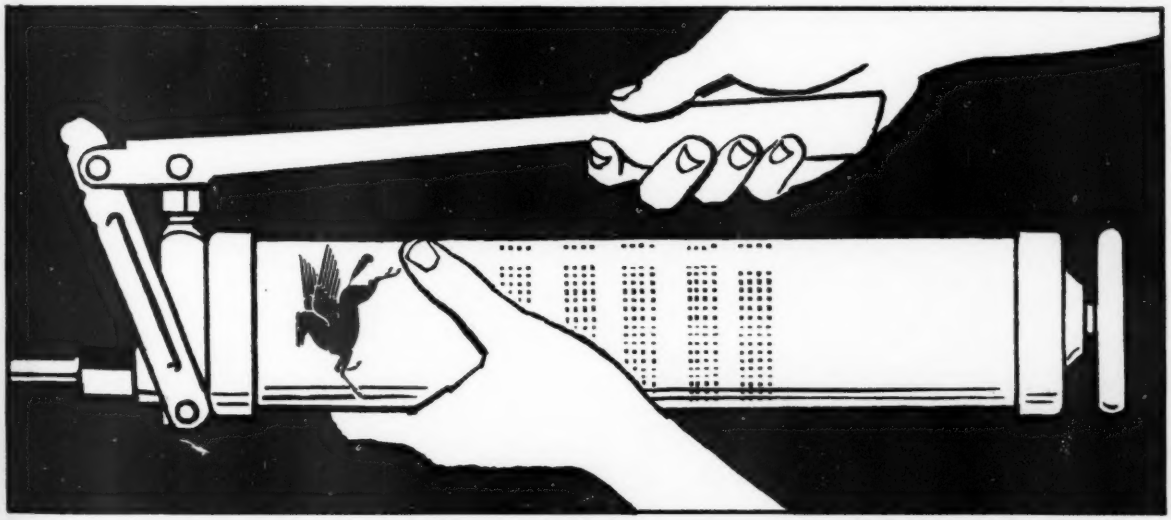

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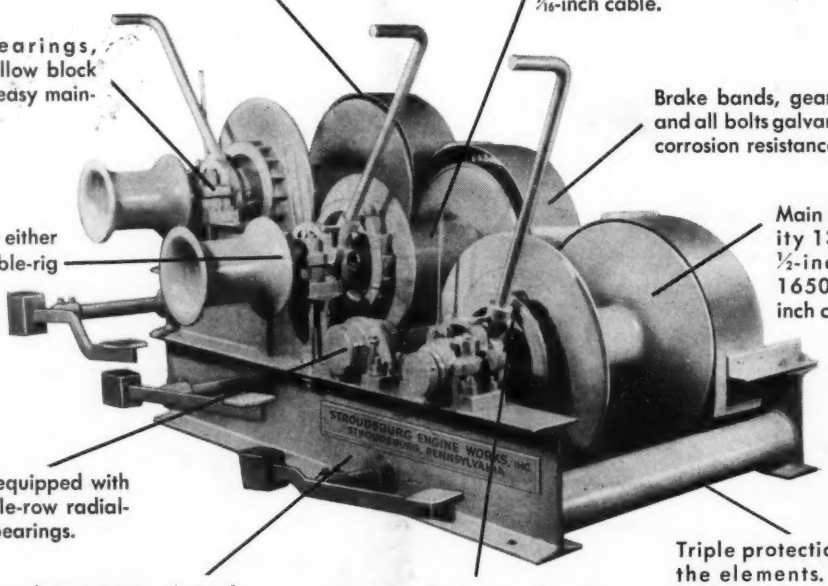

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